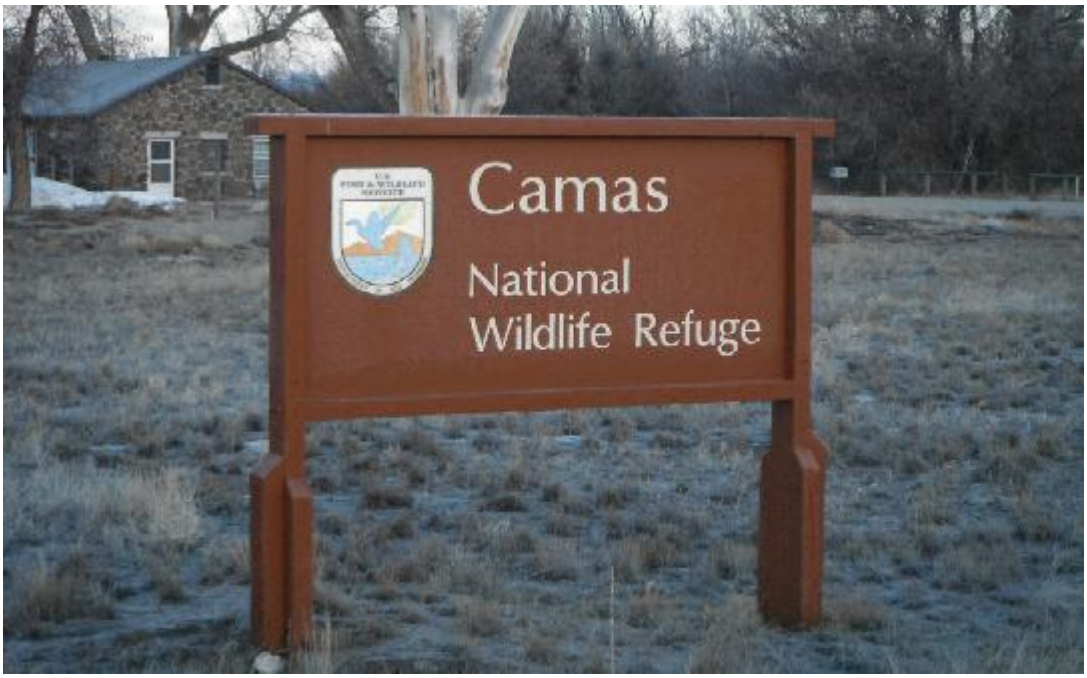
The Road Inventory of Camas National Wildlife Refuge

Hamer, ID



Prepared By:
Federal Highway Administration
Central Federal Lands Highway Division
April 2013

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INTRODUCTION

The Transportation Equity Act for the 21st Century (Public Law 105-178) created the Refuge Roads Program. Refuge roads are those public roads that provide access to or within a unit of the National Wildlife Refuge System and for which title and maintenance responsibility is vested in the United States Government. Funds from the Highway Trust Fund are available for refuge roads and can be used by the station to pay the cost of:

(a) Maintenance and improvements of refuge roads.
(b) Maintenance and improvements of:
    (1) Adjacent vehicle parking areas
    (2) Provision for pedestrians and bicycles and
    (3) Construction and reconstruction of roadside rest areas that are located in or adjacent to wildlife refuges
(c) Administrative costs associated with such maintenance and improvements.

The funds available for refuge roads are to be disbursed based on the relative needs of the various refuges in the National Wildlife Refuge System, and taking into consideration:

(a) The comprehensive conservation plan for each refuge;
(b) The need for access as identified through land use planning; and
(c) The impact of land use planning on existing transportation facilities.

To determine the relative needs of the U.S. Fish and Wildlife Service, the Federal Highway Administration (FHWA) was asked to inventory all public access roads and parking lots and provide a condition assessment of each. In 2008 the inventory was expanded to include administrative (service use only) roads and parking lots. An FHWA representative meets with refuge personnel to identify route segments and assign route numbers and functional classifications (See Appendix) for each route. All roads and parking lots are mapped using Trimble GPS units and visually assessed for condition using the RSL method of evaluation developed at Utah State University (See Appendix). Culverts, Gates, Guardrails and Low Water Crossings are also mapped and inspected for any obvious defects.

An estimate is provided, in year 2008 dollars, based on the condition determined by the rating system. Estimates are based upon data and location factors from the 2008 RS Means Heavy Construction Cost Data 22nd Annual Edition. Cost estimates should be evaluated on a case-by-case basis when being used for programming purposes.

Native Surfaced roads and parking lots already inventoried will not be re-inventoried and will not appear individually in report chapters 5, 6 and 8. Mileages and areas of native surfaced roads and parking lots will still appear in all summaries in the report and will remain in the road inventory database. In addition to this report, the FHWA will furnish the condition ratings of each route and segment to the Fish and Wildlife Service in a Microsoft Access database so the data can be included in their Real Property Inventory.

Camas NWR - 14611
Summaries

Route Miles and Percentages by Functional Class and Condition

Condition Rating (Based on RSL)*

F. C.	Excellent MILES	Excellent %	Good MILES	Good %	Fair MILES	Fair %	Poor MILES	Poor %	Failed MILES	Failed %	TOTAL MILES
I	1.08	11.0%	8.76	89.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	9.84
II	1.02	26.0%	2.91	74.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	3.93
III	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00
IV	0.00	0.0%	0.18	100.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.18
V	0.00	0.0%	20.08	90.7%	2.06	9.3%	0.00	0.0%	0.00	0.0%	22.14
Totals	**2.10**	**5.8%**	**31.93**	**88.5%**	**2.06**	**5.7%**	**0.00**	**0.0%**	**0.00**	**0.0%**	**36.09**

*For a description of condition ratings for the various surface types see the Appendix.

Route Miles and Percentages by Surface Type and Condition

Paved Condition Rating [Condition(RSL)]

Surface	Excellent MILES	Excellent %	Good MILES	Good %	Fair MILES	Fair %	Poor MILES	Poor %	Failed MILES	Failed %	TOTAL MILES
AS	0.09	100.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.09
CO	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00
Totals	**0.09**	**100.0%**	**0.00**	**0.0%**	**0.00**	**0.0%**	**0.00**	**0.0%**	**0.00**	**0.0%**	**0.09**

Unpaved Condition Rating [Condition(RSL)]

Surface	Excellent MILES	Excellent %	Good MILES	Good %	Fair MILES	Fair %	Poor MILES	Poor %	Failed MILES	Failed %	TOTAL MILES
GR	2.01	6.1%	29.18	88.1%	1.92	5.8%	0.00	0.0%	0.00	0.0%	33.11
NA	0.00	0.0%	2.75	95.2%	0.14	4.8%	0.00	0.0%	0.00	0.0%	2.89
PR	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00
Totals	2.01	**5.6%**	31.93	**88.7%**	2.06	**5.7%**	0.00	**0.0%**	0.00	**0.0%**	**36.00**

Square Footage (Parking Areas)

Condition Rating

Surface	Excellent SQ FT	Excellent %	Good SQ FT	Good %	Fair SQ FT	Fair %	Poor SQ FT	Poor %	Failed SQ FT	Failed %	Total SQ FT
AS	0	0.0%	15,311	100.0%	0	0.0%	0	0.0%	0	0.0%	15,311
CO	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
GR	0	0.0%	65,988	90.0%	7,344	10.0%	0	0.0%	0	0.0%	73,332
NA	0	0.0%	0	0.0%	7,912	74.6%	2,698	25.4%	0	0.0%	10,610
PR	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Totals	**0**	**0.0%**	**81,299**	**81.9%**	**15,256**	**15.4%**	**2,698**	**2.7%**	**0**	**0.0%**	**99,253**

Camas NWR - 14611
Summaries

Route Miles and Percentages by Use Type and Condition

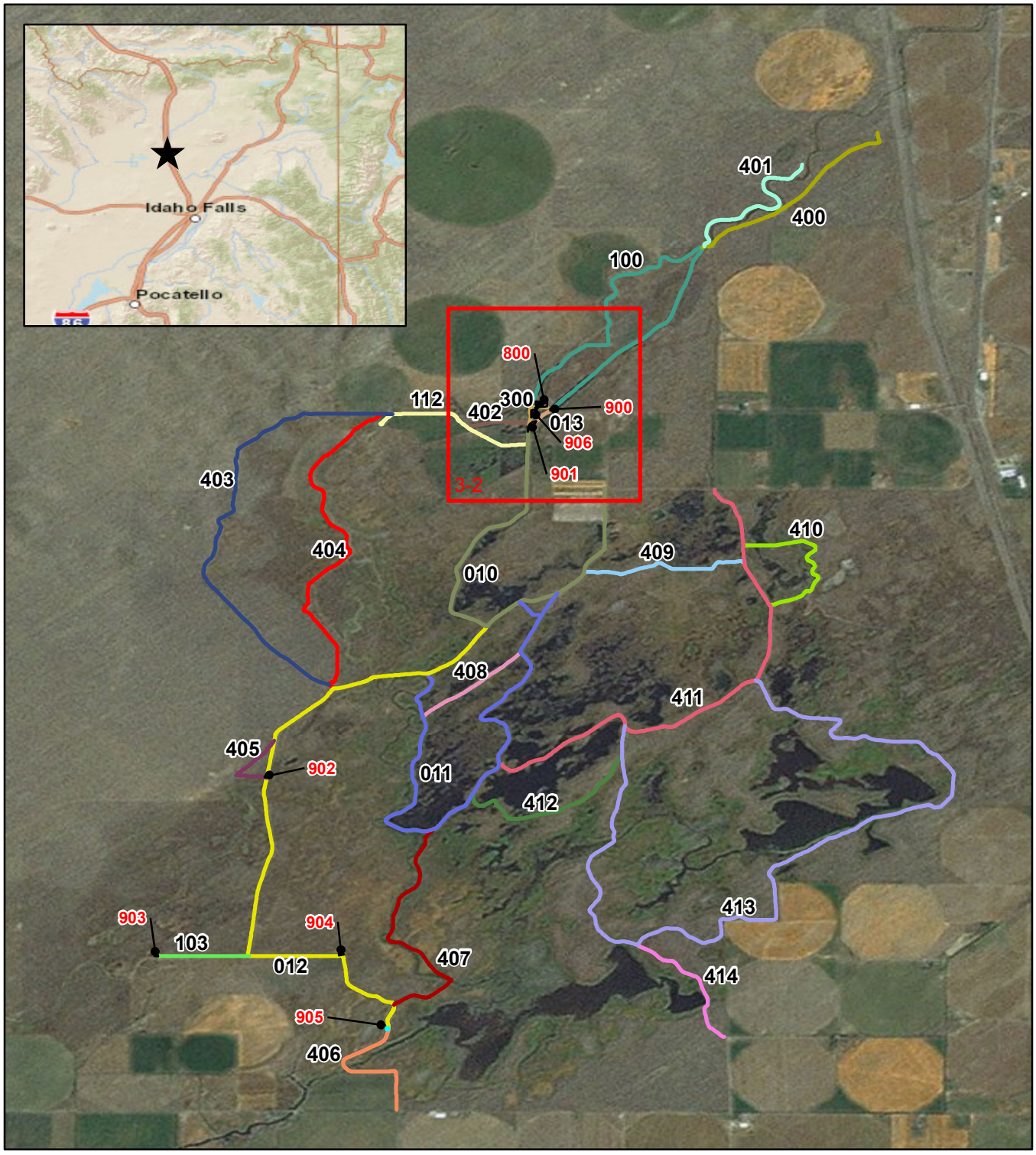
Road Condition Rating: Public/Administrative Use

USE TYPE	Excellent		Good		Fair		Poor		Failed		TOTAL
	MILES	%	MILES	%	MILES	%	MILES	%	MILES	%	MILES
Public (FC I-III)	2.10	15.3%	11.67	84.7%	0.00	0.0%	0.00	0.0%	0.00	0.0%	13.77
Admin (FC IV-V)	0.00	0.0%	20.26	90.8%	2.06	9.2%	0.00	0.0%	0.00	0.0%	22.32
Totals	**2.10**	**5.8%**	**31.93**	**88.5%**	**2.06**	**5.7%**	**0.00**	**0.0%**	**0.00**	**0.0%**	**36.09**

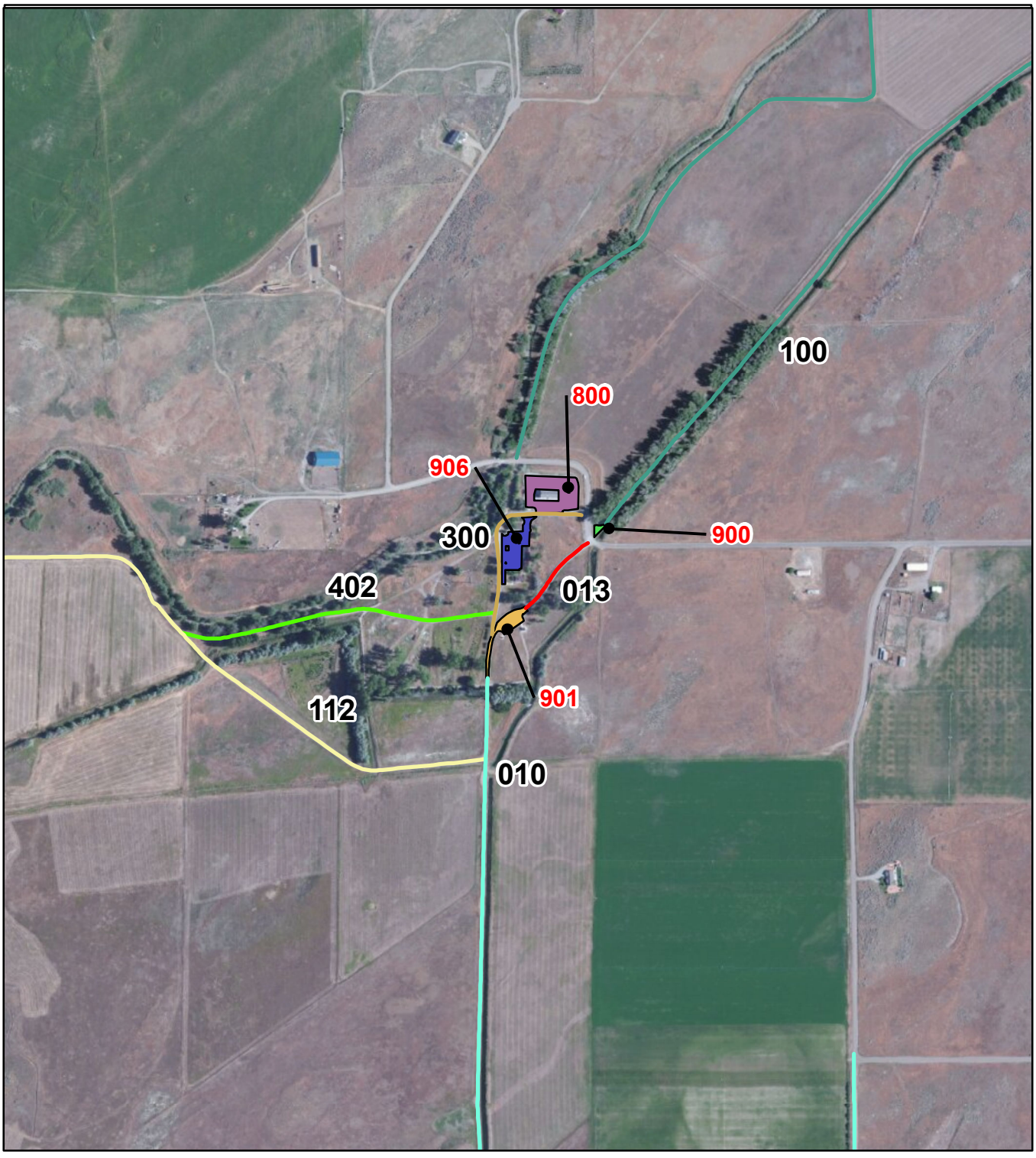
Parking Condition Rating: Public/Administrative Use

USE TYPE	Excellent		Good		Fair		Poor		Failed		Total
	Sq Ft	%	Sq Ft	%	Sq Ft	%	Sq Ft	%	Sq Ft	%	Sq Ft
Public	0	0.0%	41379	69.7%	15256	25.7%	2698	4.5%	0	0.0%	59,333
Admin	0	0.0%	39920	100.0%	0	0.0%	0	0.0%	0	0.0%	39,920
Totals	**0**	**0.0%**	**81,299**	**81.9%**	**15,256**	**15.4%**	**2,698**	**2.7%**	**0**	**0.0%**	**99,253**

Camas National Wildlife Refuge
ROUTE LOCATION MAP



Camas National Wildlife Refuge
ROUTE LOCATION MAP



Camas NWR - 14611
Route Identification List

Shading Color Key:

White = Paved Routes
Yellow = Unpaved Routes

RTE #	Asset Number	ROUTE NAME	RTE MI	ROUTE DESCRIPTION	PAVED MI	UN-PAVED MI	LANES	FC
010	10047014	Wildlife Viewing Route - Big Pond	2.67	From Visitor Parking (Route 901) to county road	-	2.67	1	1
011	10047014	Wildlife Viewing Route - Toomey Pond	3.32	From Hunter Access Road (Route 012) to Wildlife Viewing Route - Big Pond (Route 010)	-	3.32	1	1
012	10064360	Hunter Access Road	3.76	From Wildlife Viewing Route - Big Pond (Route 010) to South Hunter Access Road (Route 406)	-	3.76	1	1
013	10047055	Headquarters Entrance Road	0.09	From County Road E 2350 N to Visitor Parking (Route 901)	0.09	-	2	1
100	10051539	Well #4 Loop	2.69	From North Headquarters Hunter Access Parking (Route 900) to County Road N 2143 E	-	2.69	1	2
103	10005876	Independent Hunter Access Road	0.42	From Hunter Access Road (Route 012) to Independent Hunter Access Parking (Route 903)	-	0.42	1	2
112	-	Well 2 Access Road	0.82	From Wildlife Viewing Route - Big Pond (Route 010) to well 2	-	0.82	1	2
300	-	Shop Access Road	0.18	From County Road E 2350 N to Visitor Parking (Route 901)	-	0.18	1	4
400	-	Warm Creek Diversion Road	1.16	From Well # 4 Loop (Route 100) to end of route	-	1.16	1	5
401	-	Lair Field North to Ball Access Road	0.96	From Warm Creek Diversion Road (Route 400) to end of route	-	0.96	1	5
402	-	Boneyard Road	0.30	From Well 2 Access Road (Route 112) to Shop Access Road (Route 300)	-	0.30	1	5
403	10051540	Westside Road	2.57	From Well 2 Access Road (Route 112) to West Marsh Road (Route 404)	-	2.57	1	5
404	10064360	West Marsh Road	2.13	From Hunter Access Road (Route 012) to Westside Road (Route 403)	-	2.13	1	5
405	-	Buck Springs Access Spur	0.43	From Hunter Access Road (Route 012) to Hunter Access Road (Route 012)	-	0.43	1	5
406	-	South Hunter Access Road	0.84	From Hunter Access Road (Route 012) to end of route	-	0.84	1	5
407	10064360	Pintail Pond Road	1.52	From Hunter Access Road (Route 012) to Wildlife Viewing Route - Toomey Pond (Route 011)	-	1.52	1	5
408	10064360	Redhead Dike Road	0.62	From Wildlife Viewing Route - Toomey Pond (Route 011) to Wildlife Viewing Route - Toomey Pond (Route 011)	-	0.62	1	5
409	10064360	Spring Pond Road	0.80	From Wildlife Viewing Route - Big Pond (Route 010) to Center Pond Loop Road (Route 411)	-	0.80	1	5
410	10064360	Flat Pond Loop Road	0.91	From Center Pond Loop Road (Route 411) to Center Pond Loop Road (Route 411)	-	0.91	1	5
411	10064360	Center Pond Loop Road	2.83	From Wildlife Viewing Route - Toomey Pond (Route 011) to refuge boundary	-	2.83	1	5
412	10064360	Two-Way Pond Road	1.00	From Wildlife Viewing Route - Toomey Pond (Route 011) to Sandhole Lake Loop Road (Route 413)	-	1.00	1	5
413	10064360	Sandhole Lake Loop Road	5.27	From Center Pond Loop Road (Route 411) to Center Pond Loop Road (Route 411)	-	5.27	1	5
414	10064360	Eastside Rays Lake Access	0.80	From Sandhole Lake Loop Road (Route 413) to refuge boundary	-	0.80	1	5

Camas NWR - 14611

Route Identification List (Parking)

Shading Color Key:	White = Paved Routes
	Green = Unpaved Routes

Route #	Asset Number	ROUTE NAME	Area (Sq Ft)	ROUTE DESCRIPTION	Surface Type
800	10048290	Shop Parking	39,920	From Shop Access Parking (Route 300)	Gravel
900	10048290	North Headquarters Hunter Access Parking	1,901	From Well #4 Loop (Route 100)	Gravel
901	-	Visitor Parking	15,311	From Headquarters Entrance Road (Route 013)	Asphalt
902	10051553	Hunter Access Parking #1	2,698	From Hunter Access Road (Route 012)	Native
903	10051554	Independent Hunter Access Parking	5,443	From Independent Hunter Access Road (Route 103)	Gravel
904	10051555	Hunter Access Parking #2	5,494	From Hunter Access Road (Route 012)	Native
905	10051588	Hunter Access Parking #3	2,418	From Hunter Access Road (Route 012)	Native
906	-	Office Parking	26,068	From Shop Access Road (Route 300)	Gravel

CHANGES TO THE FISH AND WILDLIFE SERVICE ROAD INVENTORY REPORT

Camas NWR

Routes added to previous inventory:

Rte #	Rte Name	Reason For Addition
13	Headquarters Entrance Road	New Public Route
112	Well 2 Access Road	New Public Route
300	Shop Access Road	New Administrative Route
400	Warm Creek Diversion Road	New Administrative Route
401	Lair Field North to Ball Access Road	New Administrative Route
402	Boneyard Road	New Administrative Route
403	Westside Road	New Administrative Route
404	West Marsh Road	New Administrative Route
405	Buck Springs Access Spur	New Administrative Route
406	South Hunter Access Road	New Administrative Route
407	Pintail Pond road	New Administrative Route
408	Redhead Dike Road	New Administrative Route
409	Spring Pond Road	New Administrative Route
410	Flat Pond Loop Road	New Administrative Route
411	Center Pond Loop Road	New Administrative Route
412	Two-Way Pond Road	New Administrative Route
413	Sandhole Lake Loop Road	New Administrative Route
414	Eastside Rays Lake Access Road	New Administrative Route
800	Shop Parking	New Administrative Route
906	Office Parking	New Public Route

Routes removed from previous inventory:

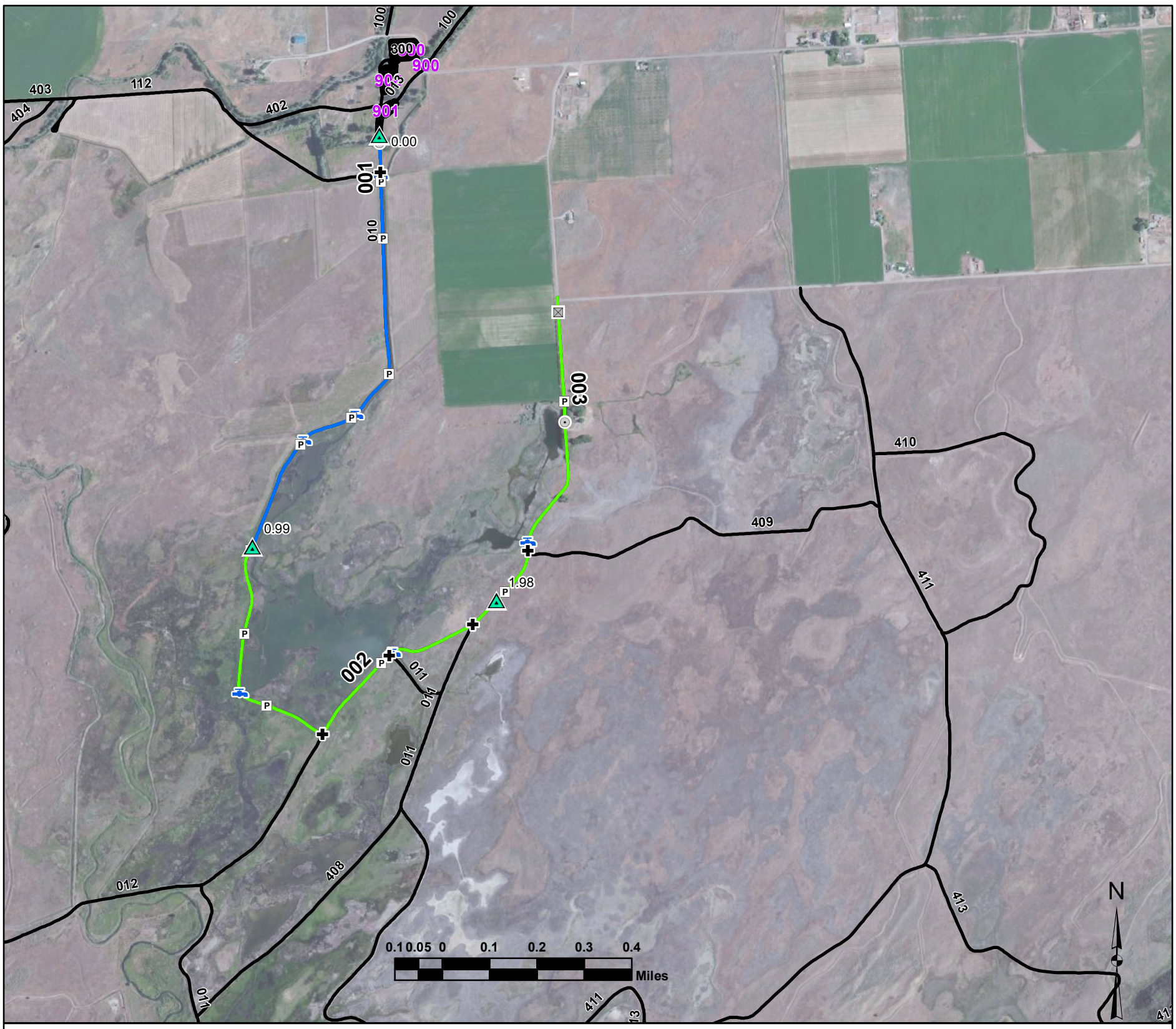
Rte #	Rte Name	Reason For Removal

Routes modified from previous inventory:

Rte #	Rte Name	Type of Modification	Description of Modification
10	Wildlife Viewing Route - Big Pond	New Geometry	Section 001 changed to Shop Access Road (Route 300)
11	Wildlife Viewing Route - Toomey Pond	New Geometry	
12	Hunter Access Road	New Geometry	
101	Westside Road	Functional Class Change	Section 001 changed to Well 2 Access Road (Route 112)
102	West Marsh Road	Functional Class Change	Changed to Route 404
104	Pintail Pond Road	Functional Class Change	Changed to Route 407
105	Redhead Dike Road	Functional Class Change	Changed to Route 408
106	Center Pond Loop Road	Functional Class Change	Changed to Route 411
107	Sandhole Lake Loop Road	Functional Class Change	Changed to Route 413
108	Two-Way Pond Road	Functional Class Change	Changed to Route 412
109	Eastside Rays Lake Access Road	Functional Class Change	Changed to Route 414
110	Flat Pond Loop Road	Functional Class Change	Changed to Route 410
111	Spring Pond Road	Functional Class Change	Changed to Route 409
901	Visitor Parking	New Geometry	

Comments:

ROUTE 010



Wildlife Viewing Route - Big Pond

From Visitor Parking (Route 901) to county road

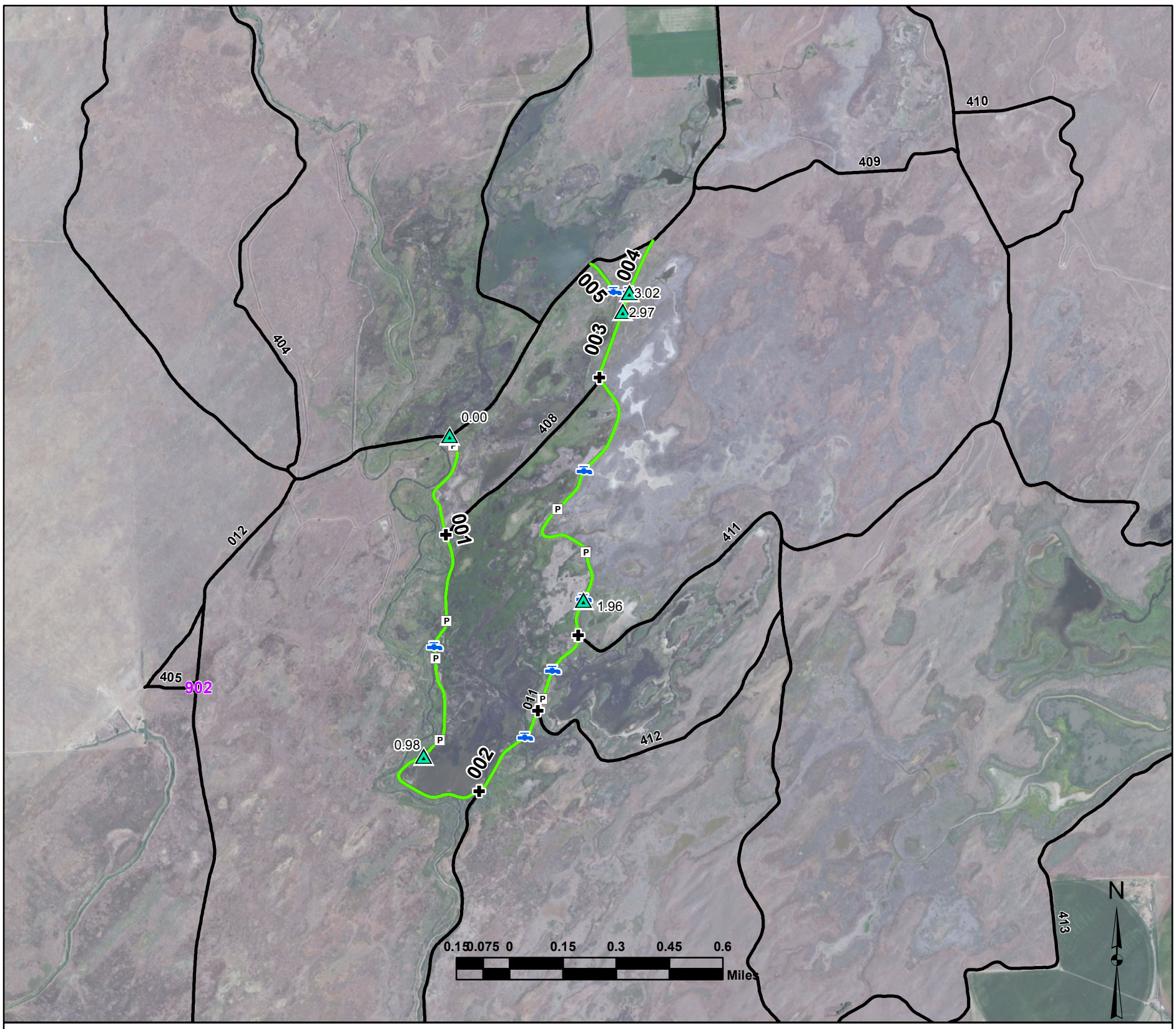
Route Number: 010

Total Route Mileage: 2.67

Asset Number	10047014	10047014	10047014		
Section Number	001	002	003		
Section Length (miles)	0.99	0.99	0.69		
Inspection Date	03-18-2013	03-18-2013	03-18-2013		
Surface Type	Gravel	Gravel	Gravel		
Number of Lanes	1	1	1		
Roadway Width (feet)	14	14	14		
Condition	Excellent	Good	Good		
Remaining Service Life (years)	9	7	7		
Estimated Cost to Repair	$0	$1,500	$1,000		
Current Replacement Value	$642,200	$642,200	$447,600		

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0	Turnout/Parking	002-1.32				
Culvert	001-0.01	Intersection	002-1.47				
Intersection	001-0.07	Turnout/Parking	002-1.66				
Water Control Structure	001-0.07	Intersection	002-1.69				
Turnout/Parking	001-0.08	Water Control Structure	002-1.7				
Turnout/Parking	001-0.2	Intersection	002-1.9				
Turnout/Parking	001-0.46	Begin Section	003-1.98				
Water Control Structure	001-0.58	Turnout/Parking	003-2.0				
Turnout/Parking	001-0.59	Intersection	003-2.11				
Water Control Structure	001-0.73	Water Control Structure	003-2.13				
Turnout/Parking	001-0.74	Culvert	003-2.42				
Begin Section	002-0.99	Turnout/Parking	003-2.46				
Turnout/Parking	002-0.99	Gate	003-2.64				
Turnout/Parking	002-1.15						
Water Control Structure	002-1.26						

ROUTE 011



Wildlife Viewing Route - Toomey Pond

From Hunter Access Road (Route 012) to Wildlife Viewing Route - Big Pond (Route 010)

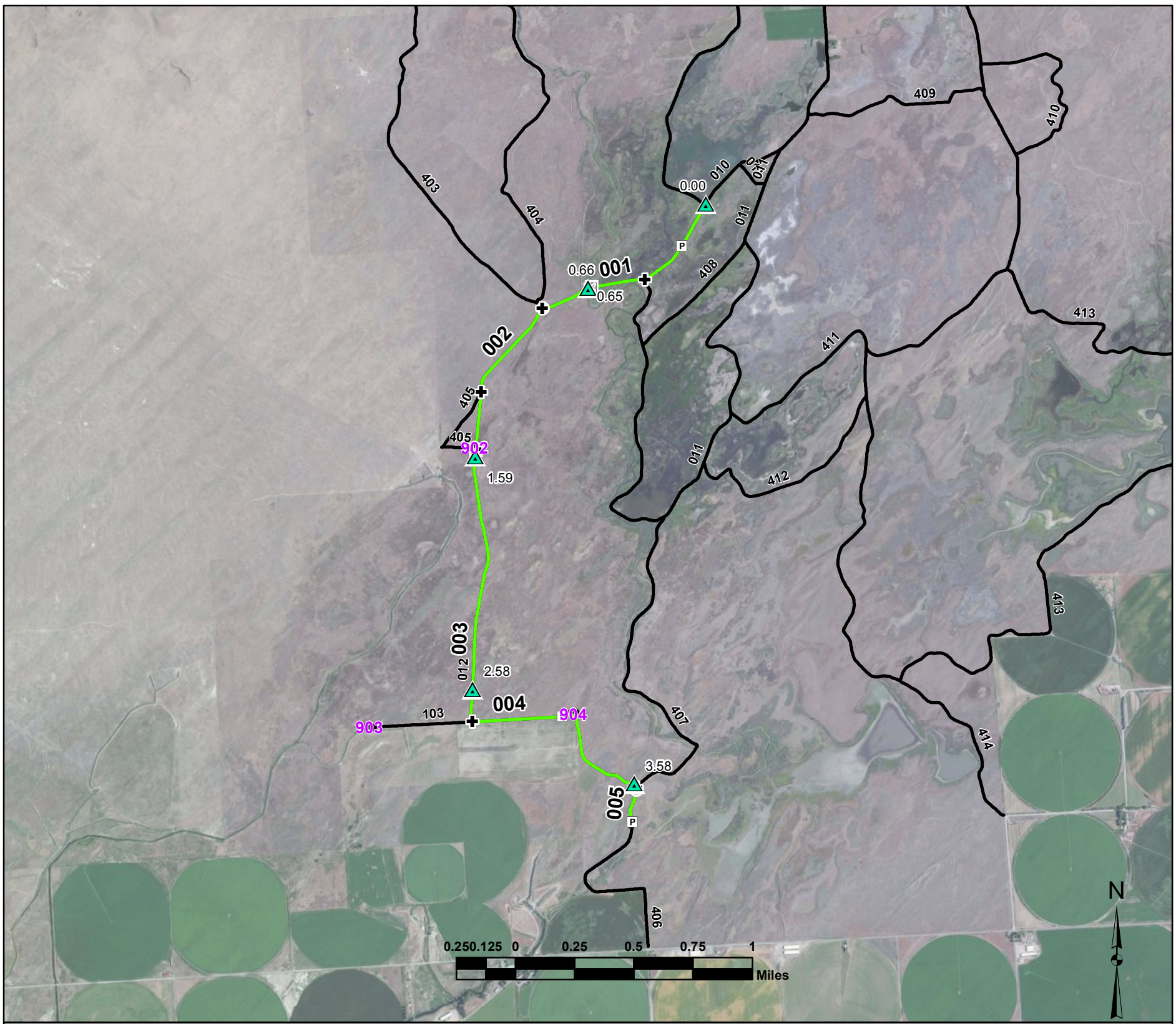
Route Number: 011

Total Route Mileage: 3.32

Asset Number	10047014	10047014	10047014	10047014	10047014
Section Number	001	002	003	004	005
Section Length (miles)	0.98	0.98	1.01	0.21	0.14
Inspection Date	03-18-2013	03-18-2013	03-18-2013	03-18-2013	03-18-2013
Surface Type	Gravel	Gravel	Gravel	Gravel	Native
Number of Lanes	1	1	1	1	1
Roadway Width (feet)	14	14	12	12	12
Condition	Good	Good	Good	Good	Good
Remaining Service Life (years)	7	7	7	7	5
Estimated Cost to Repair	$1,500	$1,500	$1,500	$300	$200
Current Replacement Value	$635,700	$635,700	$655,200	$136,200	$47,000

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.00	Intersection	003-0.62				
Turnout/Parking	001-0.03	Begin Section	003-1.96				
Intersection	001-0.39	Turnout/Parking	003-1.96				
Turnout/Parking	001-0.56	Turnout/Parking	003-1.96				
Water Control Structure	001-0.64	Water Control Structure	003-1.96				
Turnout/Parking	001-0.67	Water Control Structure	003-2.48				
Turnout/Parking	001-0.9	Begin Section	004-2.97				
Begin Section	002-0.98	Water Control Structure	004-3.02				
Intersection	002-1.35	Begin Section	005-3.02				
Water Control Structure	002-1.56	Water Control Structure	005-3.06				
Intersection	002-1.63						
Turnout/Parking	002-1.66						
Water Control Structure	002-1.74						
Intersection	002-1.86						
Turnout/Parking	002-1.88						

ROUTE 012



Hunter Access Road

From Wildlife Viewing Route - Big Pond (Route 010) to South Hunter Access Road (Route 406)

Route Number: 012

Total Route Mileage: 3.76

Asset Number	10064360	10064360	10064360	10064360	10064360
Section Number	001	002	003	004	005
Section Length (miles)	0.66	0.93	0.99	1.00	0.18
Inspection Date	03-18-2013	03-18-2013	03-18-2013	03-18-2013	03-18-2013
Surface Type	Gravel	Gravel	Gravel	Gravel	Gravel
Number of Lanes	1	1	1	1	1
Roadway Width (feet)	14	12	14	12	14
Condition	Good	Good	Good	Good	Good
Remaining Service Life (years)	5	5	5	5	5
Estimated Cost to Repair	$1,000	$1,400	$1,500	$1,500	$300
Current Replacement Value	$428,100	$603,300	$642,200	$648,700	$116,800

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0	Begin Section	005-3.58				
Turnout/Parking	001-0.18	Intersection	005-3.6				
Intersection	001-0.39	Culvert	005-3.6				
Cattle Guard	001-0.64	Turnout/Parking	005-3.75				
Bridge	001-0.65						
Begin Section	002-0.66						
Culvert	002-0.89						
Intersection	002-0.9						
Intersection	002-1.35						
Intersection	002-1.56						
Cattle Guard	002-1.56						
Begin Section	003-1.59						
Begin Section	004-2.58						
Intersection	004-2.69						
Turnout/Parking	004-3.11						

ROUTE 013

Headquarters Entrance Road

From County Road E 2350 N to Visitor Parking (Route 901)

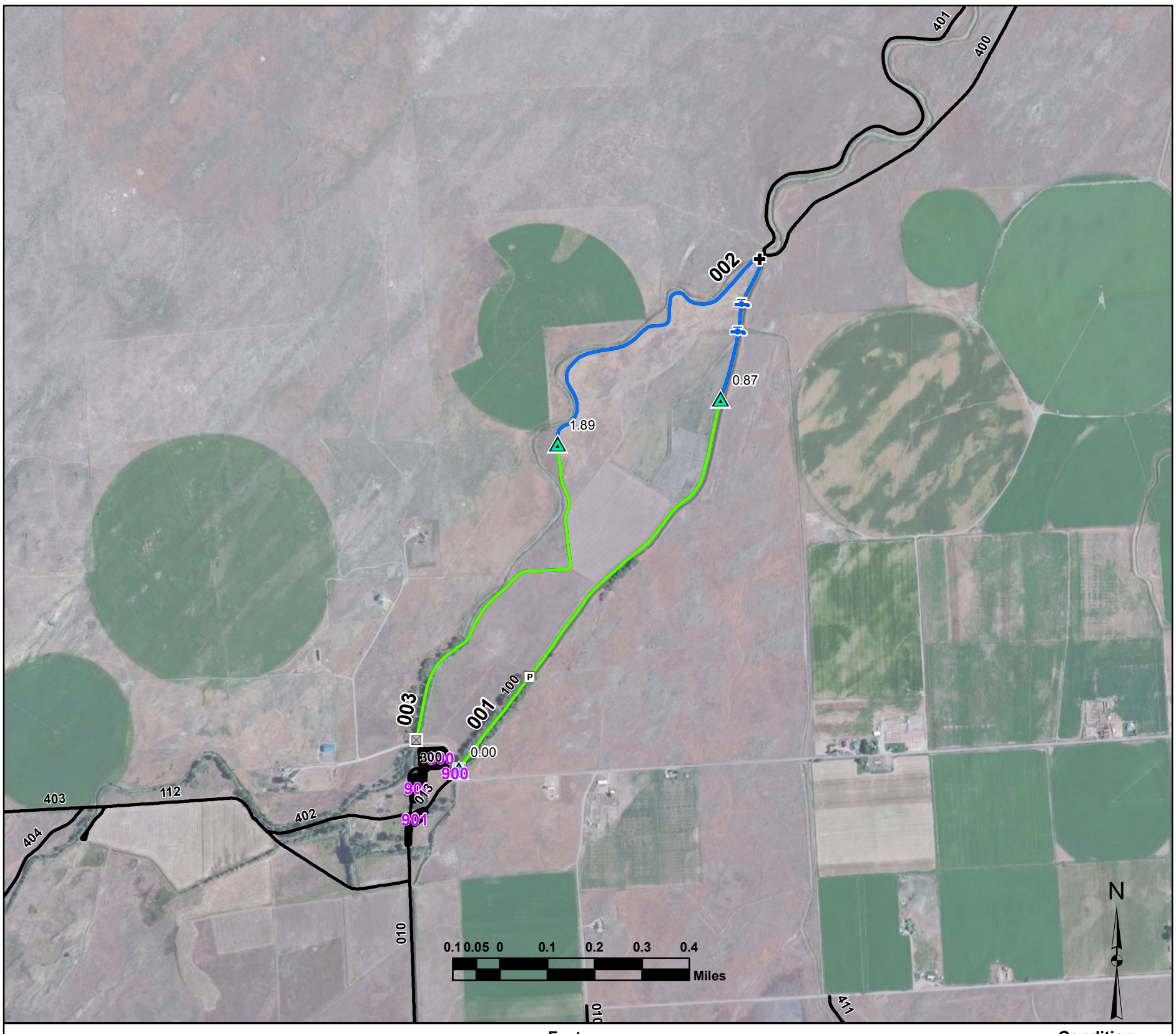
Route Number: 013

Total Route Mileage: 0.09

Asset Number	10047055				
Section Number	001				
Section Length (miles)	0.09				
Inspection Date	03-18-2013				
Surface Type	Asphalt				
Number of Lanes	2				
Roadway Width (feet)	30				
Condition	Excellent				
Remaining Service Life (years)	20				
Estimated Cost to Repair	$0				
Current Replacement Value	$101,300				

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Turnout/Parking	001-0.09						

ROUTE 100



Well #4 Loop

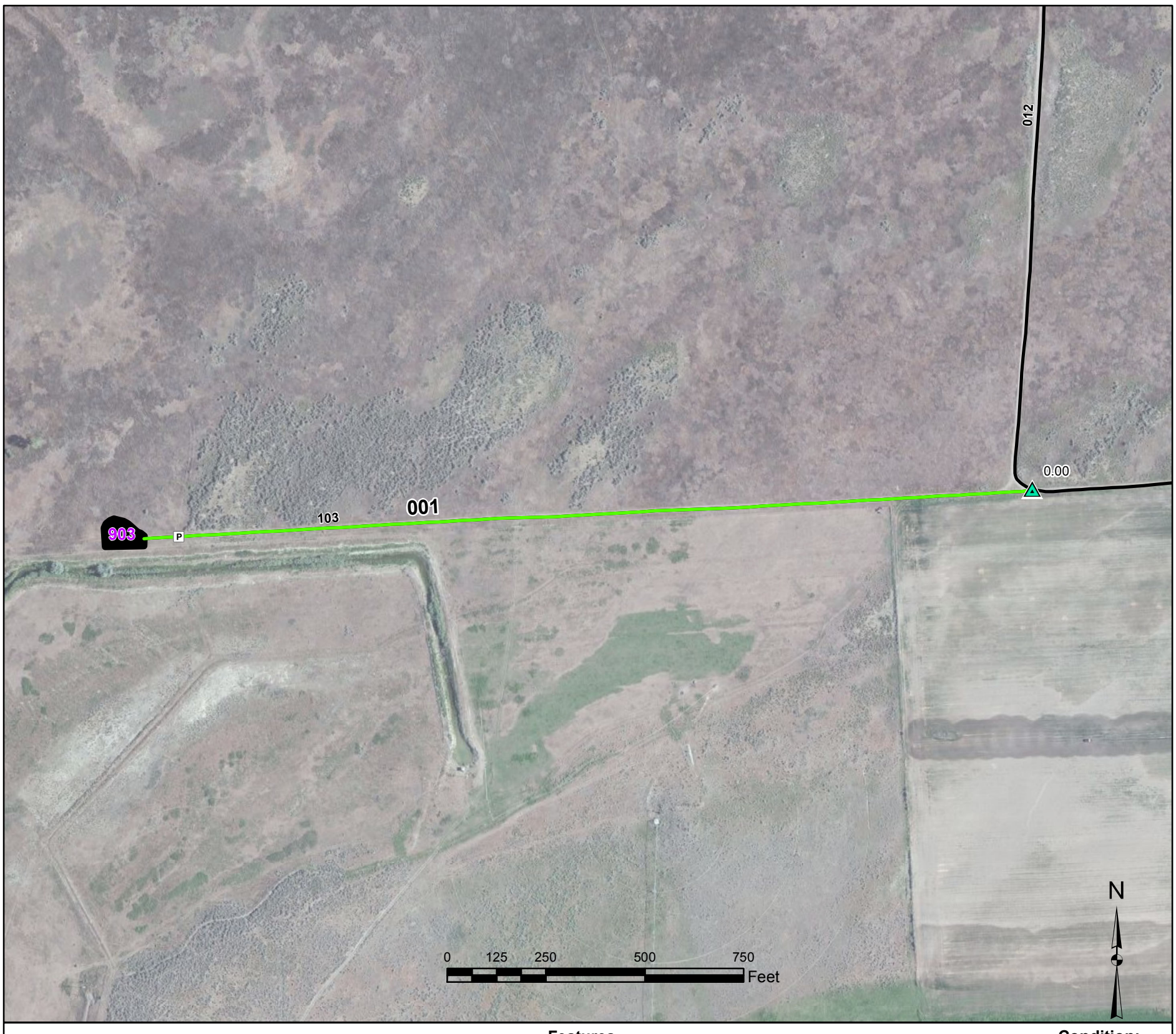
From North Headquarters Hunter Access Parking (Route 900) to County Road N 2143 E

Route Number: 100

Total Route Mileage: 2.69

Asset Number	10051539	10051539	10051539		
Section Number	001	002	003		
Section Length (miles)	0.87	1.02	0.80		
Inspection Date	03-18-2013	03-18-2013	03-18-2013		
Surface Type	Gravel	Gravel	Gravel		
Number of Lanes	1	1	1		
Roadway Width (feet)	12	14	12		
Condition	Good	Excellent	Good		
Remaining Service Life (years)	7	9	7		
Estimated Cost to Repair	$1,300	$0	$1,200		
Current Replacement Value	$564,400	$661,700	$519,000		

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Turnout/Parking	001-0.0						
Gate	001-0.0						
Turnout/Parking	001-0.22						
Begin Section	002-0.87						
Water Control Structure	002-1.0						
Water Control Structure	002-1.05						
Intersection	002-1.6						
Begin Section	003-1.89						
Gate	003-2.74						



Independent Hunter Access Road

From Hunter Access Road (Route 012) to Independent Hunter Access Parking (Route 903)

Route Number: 103

Total Route Mileage: 0.42

Asset Number	10005876				
Section Number	001				
Section Length (miles)	0.42				
Inspection Date	03-18-2013				
Surface Type	Gravel				
Number of Lanes	1				
Roadway Width (feet)	10				
Condition	Good				
Remaining Service Life (years)	7				
Estimated Cost to Repair	$600				
Current Replacement Value	$272,500				

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Turnout/Parking	001-0.4						

Well 2 Access Road

From Wildlife Viewing Route - Big Pond (Route 010) to well 2

Route Number: 112

Total Route Mileage: 0.82

Asset Number	-				
Section Number	001				
Section Length (miles)	0.82				
Inspection Date	03-18-2013				
Surface Type	Gravel				
Number of Lanes	1				
Roadway Width (feet)	10				
Condition	Good				
Remaining Service Life (years)	5				
Estimated Cost to Repair	$1,200				
Current Replacement Value	$531,900				

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Water Control Structure	001-0.11						
Culvert	001-0.3						
Intersection	001-0.33						
Intersection	001-0.71						

Shop Access Road

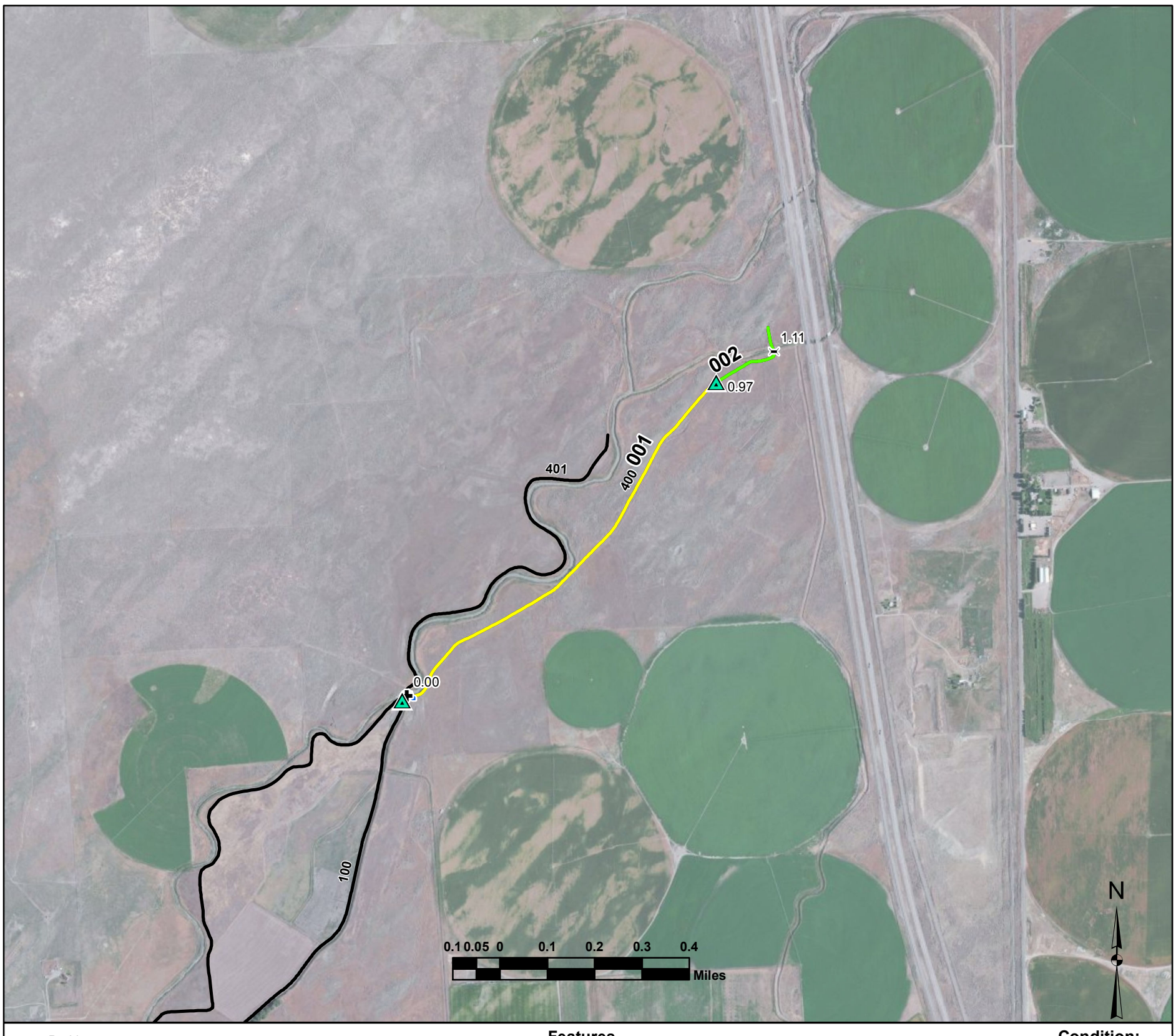
From County Road E 2350 N to Visitor Parking (Route 901)

Route Number: 300

Total Route Mileage: 0.18

Asset Number	-				
Section Number	001				
Section Length (miles)	0.18				
Inspection Date	03-19-2013				
Surface Type	Gravel				
Number of Lanes	1				
Roadway Width (feet)	14				
Condition	Good				
Remaining Service Life (years)	5				
Estimated Cost to Repair	$300				
Current Replacement Value	$116,800				

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Gate	001-0.0						
Culvert	001-0.01						
Turnout/Parking	001-0.03						
Turnout/Parking	001-0.05						
Intersection	001-0.17						
Turnout/Parking	001-0.2						



Warm Creek Diversion Road

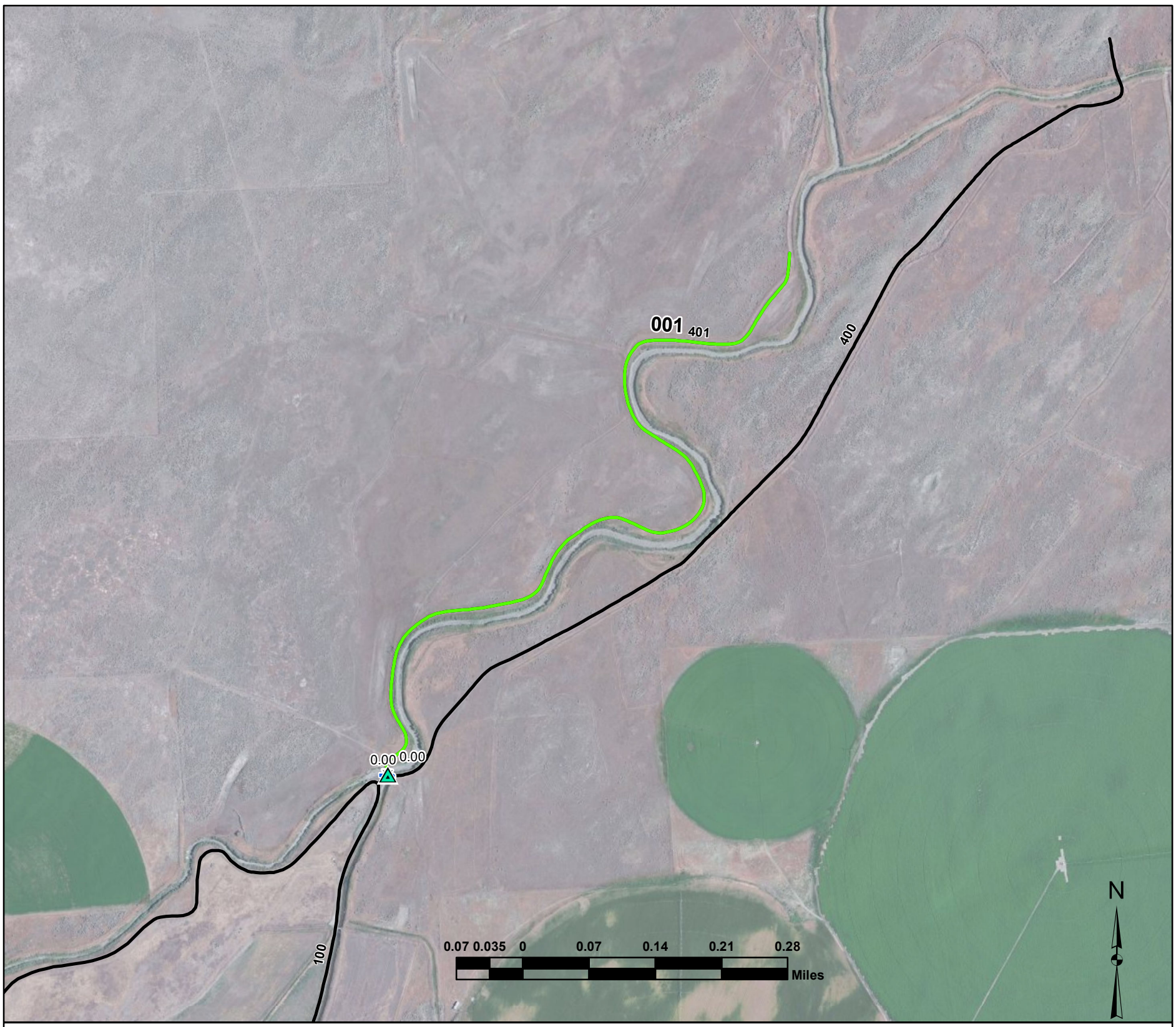
From Well # 4 Loop (Route 100) to end of route

Route Number: 400

Total Route Mileage: 1.16

Asset Number	-	-			
Section Number	001	002			
Section Length (miles)	0.97	0.19			
Inspection Date	03-18-2013	03-18-2013			
Surface Type	Gravel	Gravel			
Number of Lanes	1	1			
Roadway Width (feet)	10	10			
Condition	Fair	Good			
Remaining Service Life (years)	4	5			
Estimated Cost to Repair	$3,300	$300			
Current Replacement Value	$629,200	$123,300			

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Intersection	001-0.01						
Water Control Structure	001-0.01						
Begin Section	002-0.97						
Bridge	002-1.11						



Lair Field North to Ball Access Road

From Warm Creek Diversion Road (Route 400) to end of route

Route Number: 401

Total Route Mileage: 0.96

Asset Number	-				
Section Number	001				
Section Length (miles)	0.96				
Inspection Date	03-18-2013				
Surface Type	Native				
Number of Lanes	1				
Roadway Width (feet)	10				
Condition	Good				
Remaining Service Life (years)	5				
Estimated Cost to Repair	$1,600				
Current Replacement Value	$322,200				

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Bridge	001-0.0						
Water Control Structure	001-0.0						

Boneyard Road

From Well 2 Access Road (Route 112) to Shop Access Road (Route 300)

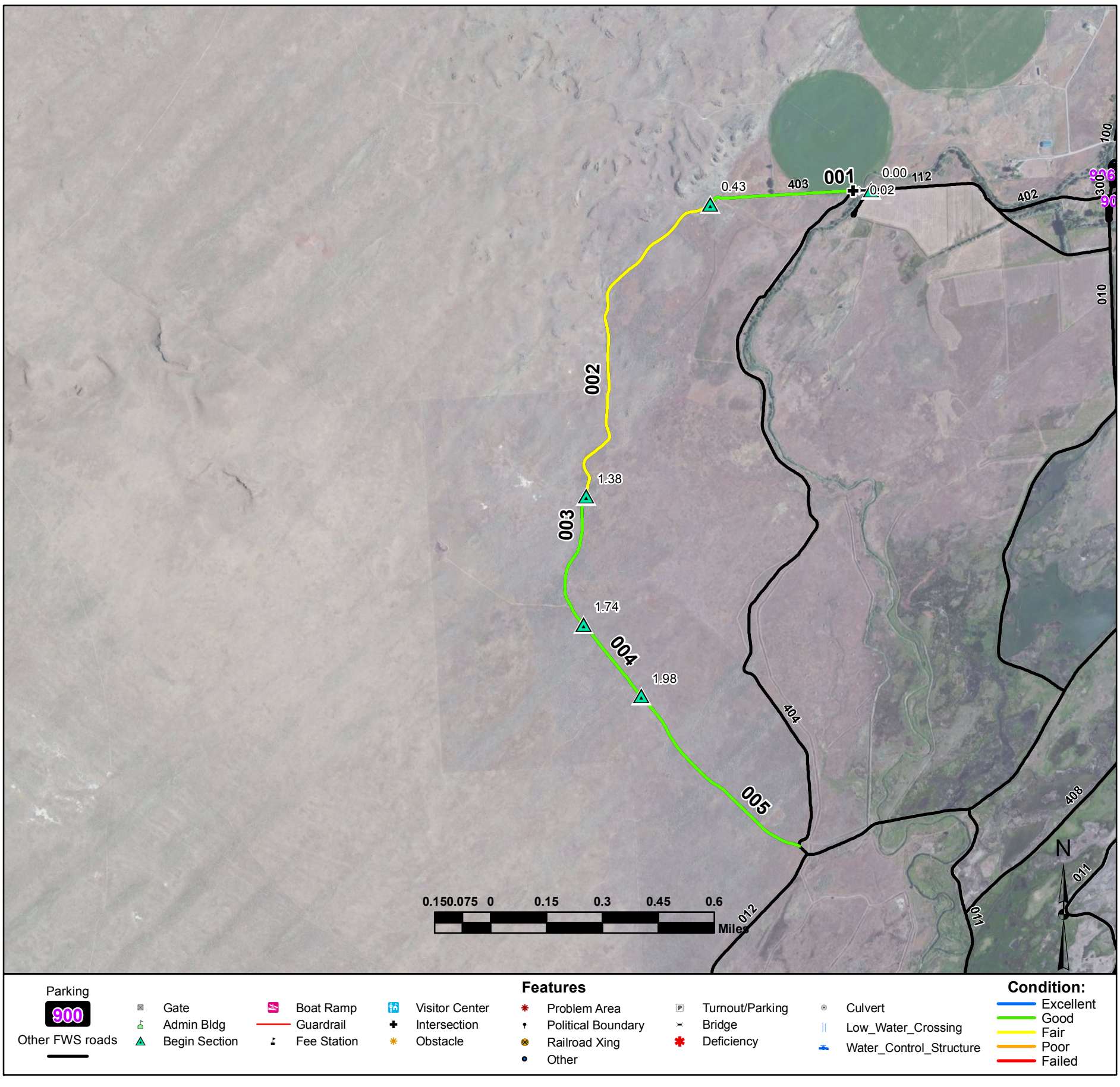
Route Number: 402

Total Route Mileage: 0.30

Asset Number	-				
Section Number	001				
Section Length (miles)	0.30				
Inspection Date	03-18-2013				
Surface Type	Gravel				
Number of Lanes	1				
Roadway Width (feet)	10				
Condition	Good				
Remaining Service Life (years)	7				
Estimated Cost to Repair	$500				
Current Replacement Value	$194,600				

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						

ROUTE 403



Westside Road

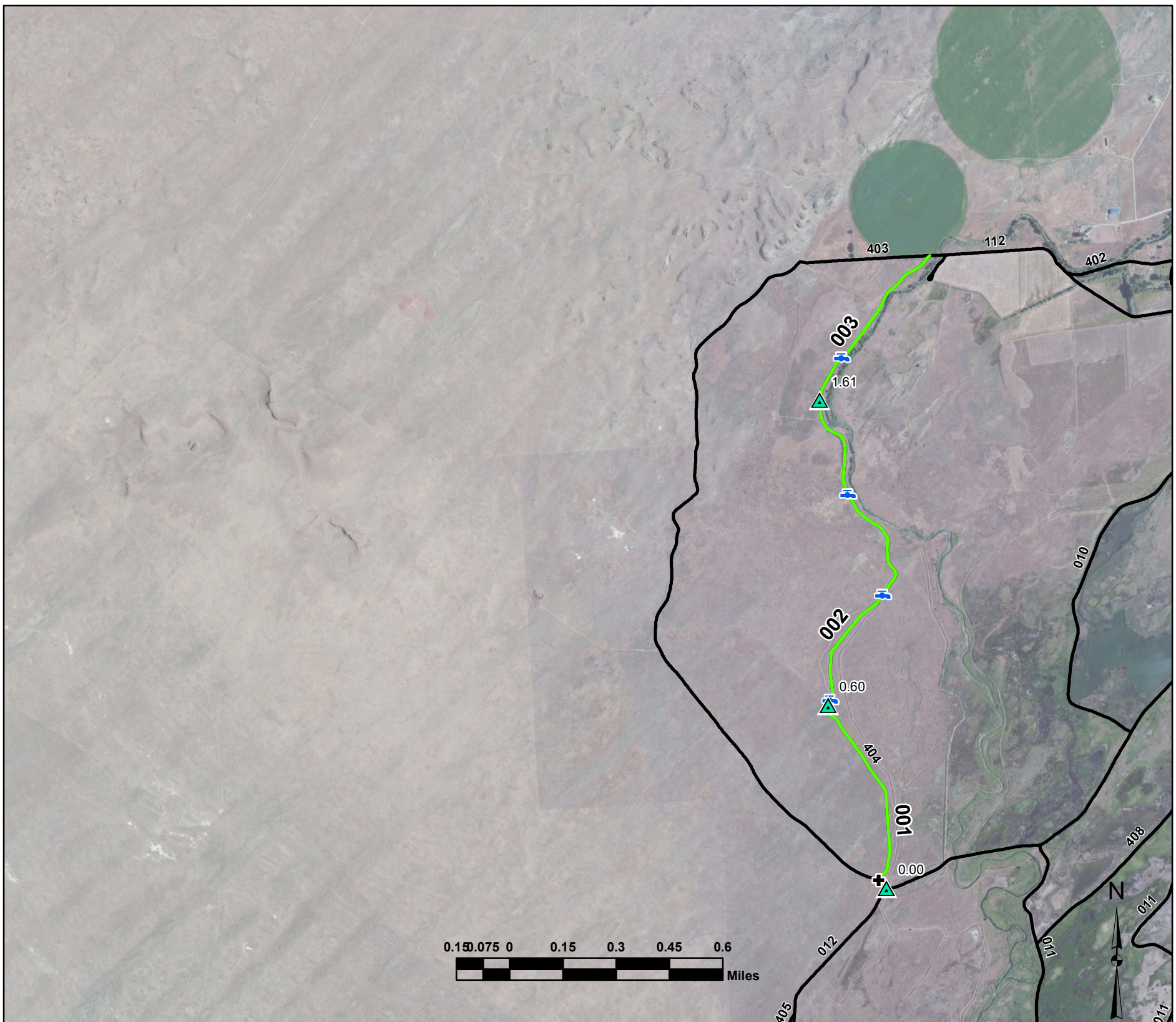
From Well 2 Access Road (Route 112) to West Marsh Road (Route 404)

Route Number: 403

Total Route Mileage: 2.57

Asset Number	10051540	10051540	10051540	10051540	10051540
Section Number	001	002	003	004	005
Section Length (miles)	0.43	0.95	0.36	0.24	0.59
Inspection Date	03-18-2013	03-18-2013	03-18-2013	03-18-2013	03-18-2013
Surface Type	Gravel	Gravel	Native	Gravel	Gravel
Number of Lanes	1	1	1	1	1
Roadway Width (feet)	10	10	10	10	10
Condition	Good	Fair	Good	Good	Good
Remaining Service Life (years)	7	4	5	5	5
Estimated Cost to Repair	$700	$3,200	$600	$400	$900
Current Replacement Value	$278,900	$616,300	$120,800	$155,700	$382,700

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Bridge	001-0.02						
Intersection	001-0.04						
Begin Section	002-0.43						
Begin Section	003-1.38						
Begin Section	004-1.74						
Begin Section	005-1.98						



West Marsh Road

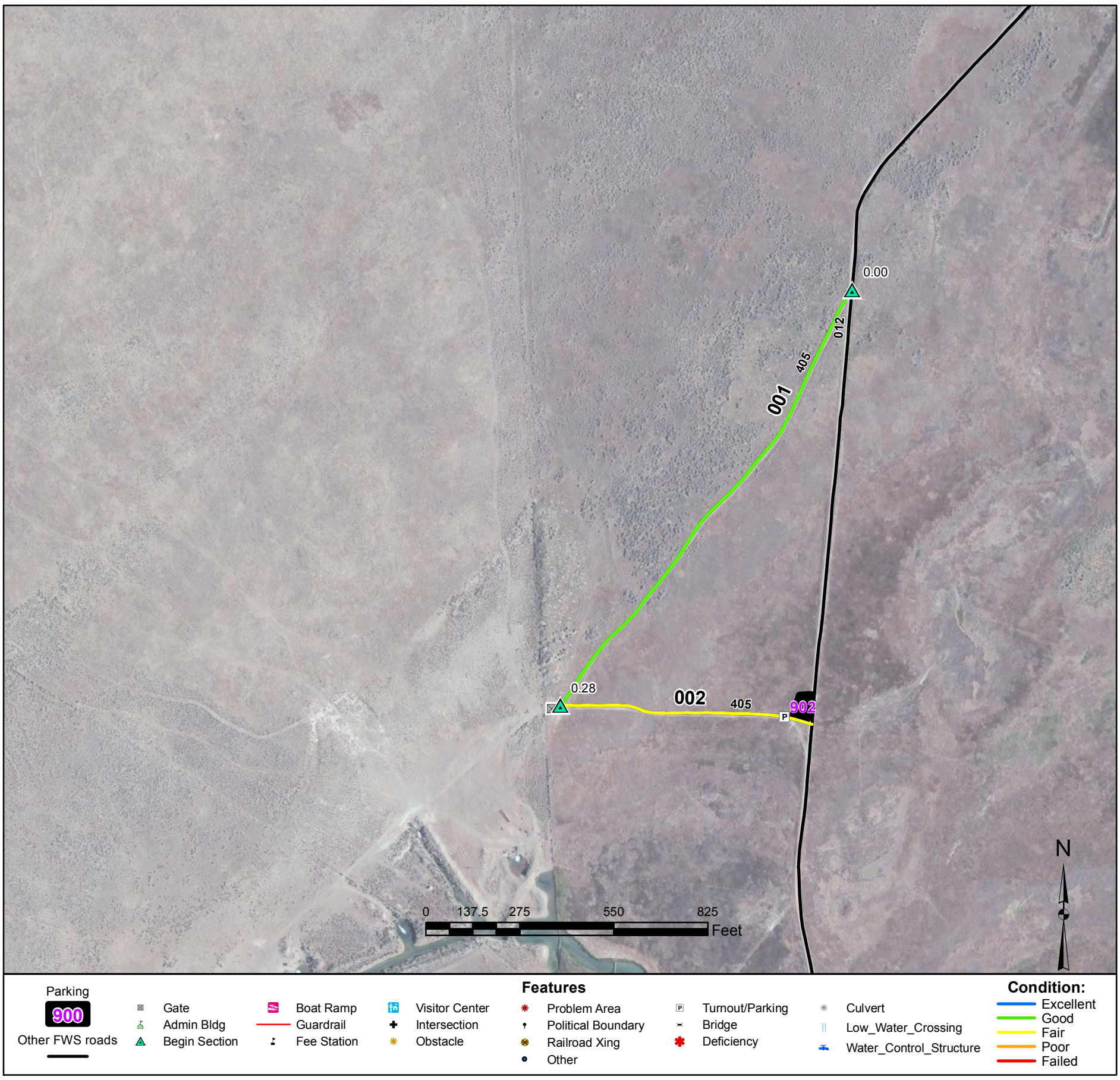
From Hunter Access Road (Route 012) to Westside Road (Route 403)

Route Number: 404

Total Route Mileage: 2.13

Asset Number	10064360	10064360	10064360		
Section Number	001	002	003		
Section Length (miles)	0.60	1.01	0.52		
Inspection Date	03-18-2013	03-18-2013	03-18-2013		
Surface Type	Gravel	Gravel	Gravel		
Number of Lanes	1	1	1		
Roadway Width (feet)	10	10	10		
Condition	Good	Good	Good		
Remaining Service Life (years)	5	5	5		
Estimated Cost to Repair	$900	$1,500	$800		
Current Replacement Value	$389,200	$655,200	$337,300		

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Intersection	001-0.03						
Water Control Structure	001-0.61						
Begin Section	002-0.6						
Water Control Structure	002-0.97						
Water Control Structure	002-1.32						
Begin Section	003-1.61						
Water Control Structure	003-1.74						



Buck Springs Access Spur

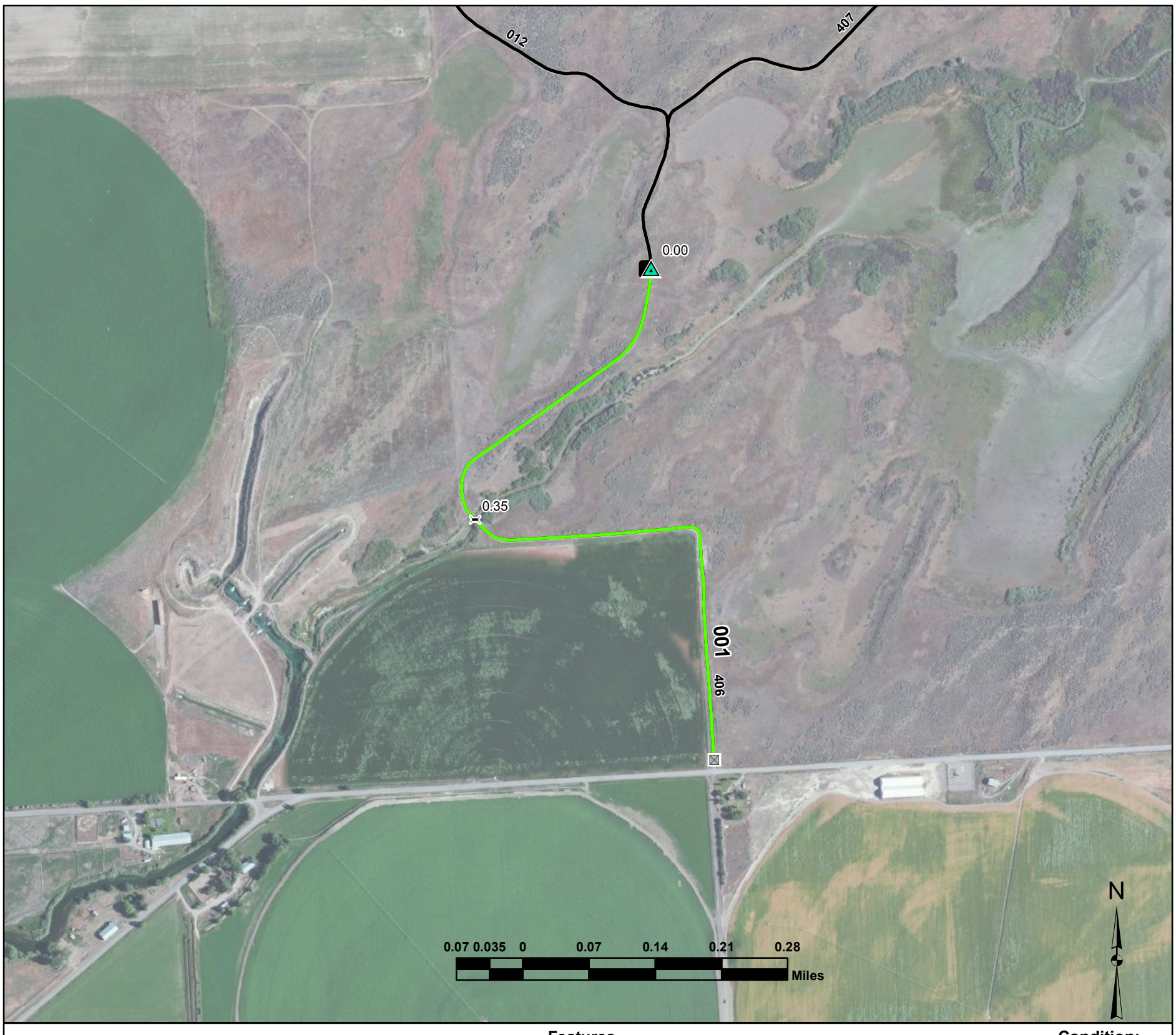
From Hunter Access Road (Route 012) to Hunter Access Road (Route 012)

Route Number: 405

Total Route Mileage: 0.43

Asset Number	-	-			
Section Number	001	002			
Section Length (miles)	0.29	0.14			
Inspection Date	03-18-2013	03-18-2013			
Surface Type	Native	Native			
Number of Lanes	1	1			
Roadway Width (feet)	10	10			
Condition	Good	Fair			
Remaining Service Life (years)	5	4			
Estimated Cost to Repair	$500	$300			
Current Replacement Value	$97,300	$47,000			

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Gate	001-0.29						
Begin Section	002-0.28						
Turnout/Parking	002-0.4						



South Hunter Access Road

From Hunter Access Road (Route 012) to end of route

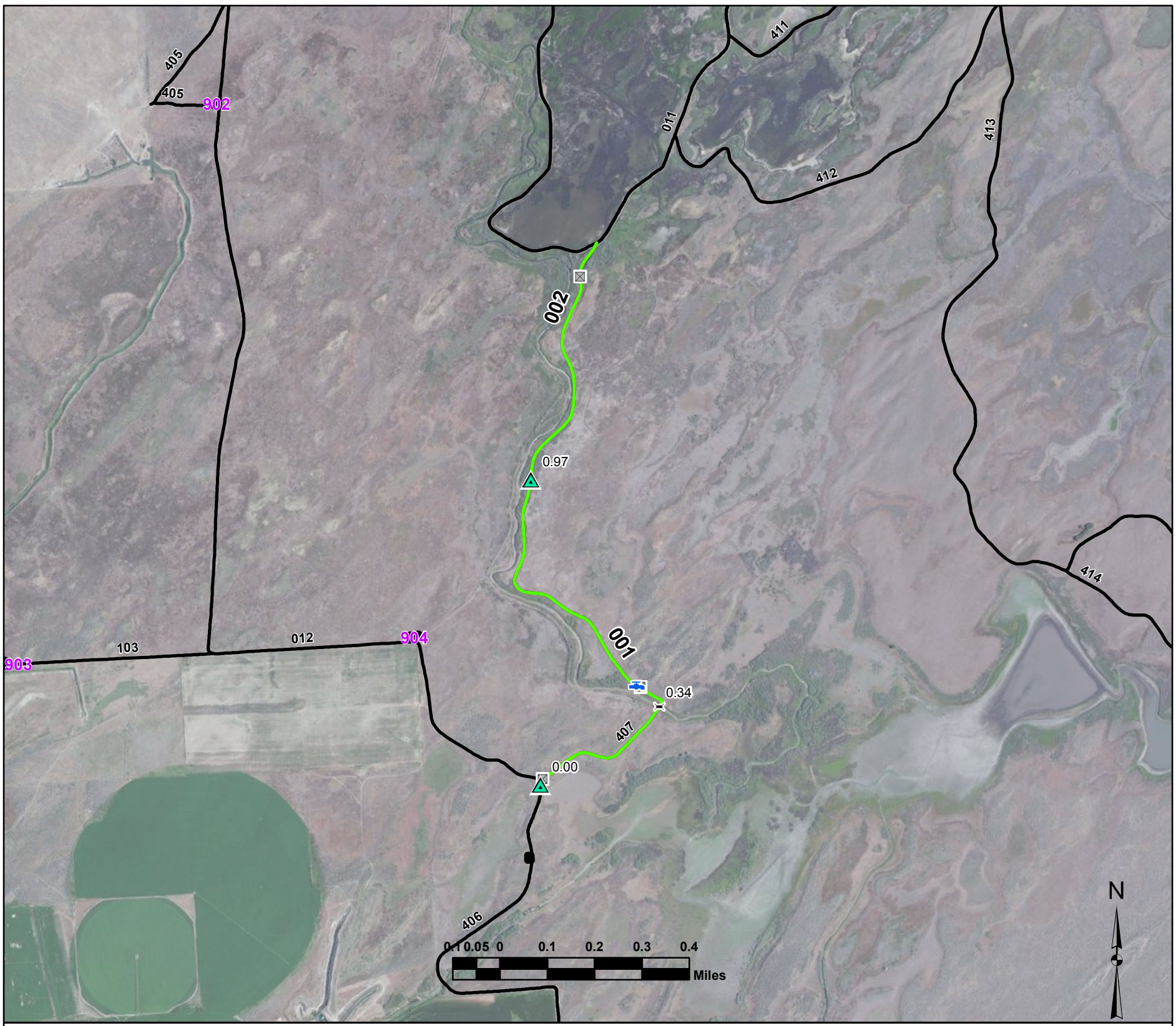
Route Number: 406

Total Route Mileage: 0.84

Asset Number	-				
Section Number	001				
Section Length (miles)	0.84				
Inspection Date	03-18-2013				
Surface Type	Gravel				
Number of Lanes	1				
Roadway Width (feet)	12				
Condition	Good				
Remaining Service Life (years)	5				
Estimated Cost to Repair	$1,300				
Current Replacement Value	$544,900				

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Bridge	001-0.35						
Gate	001-0.84						

ROUTE 407



Pintail Pond Road

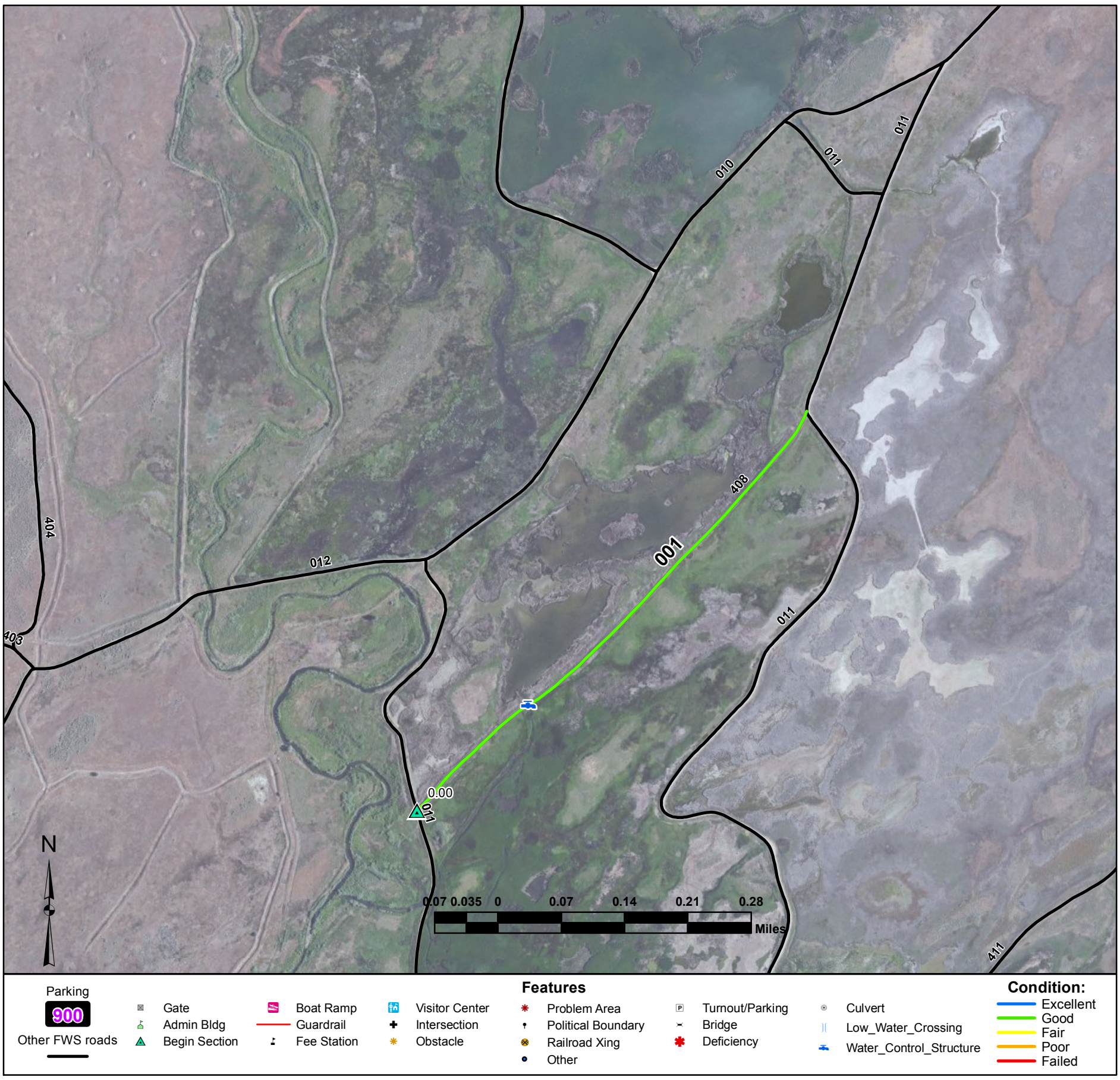
From Hunter Access Road (Route 012) to Wildlife Viewing Route - Toomey Pond (Route 011)

Route Number: 407

Total Route Mileage: 1.52

Asset Number	10064360	10064360			
Section Number	001	002			
Section Length (miles)	0.97	0.55			
Inspection Date	03-18-2013	03-18-2013			
Surface Type	Gravel	Gravel			
Number of Lanes	1	1			
Roadway Width (feet)	14	12			
Condition	Good	Good			
Remaining Service Life (years)	5	7			
Estimated Cost to Repair	$1,500	$800			
Current Replacement Value	$629,200	$356,800			

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Gate	001-0.01						
Bridge	001-0.34						
Cattle Guard	001-0.41						
Water Control Structure	001-0.42						
Begin Section	002-0.97						
Cattle Guard	002-1.43						



Redhead Dike Road

From Wildlife Viewing Route - Toomey Pond (Route 011) to Wildlife Viewing Route - Toomey Pond (Route 011)

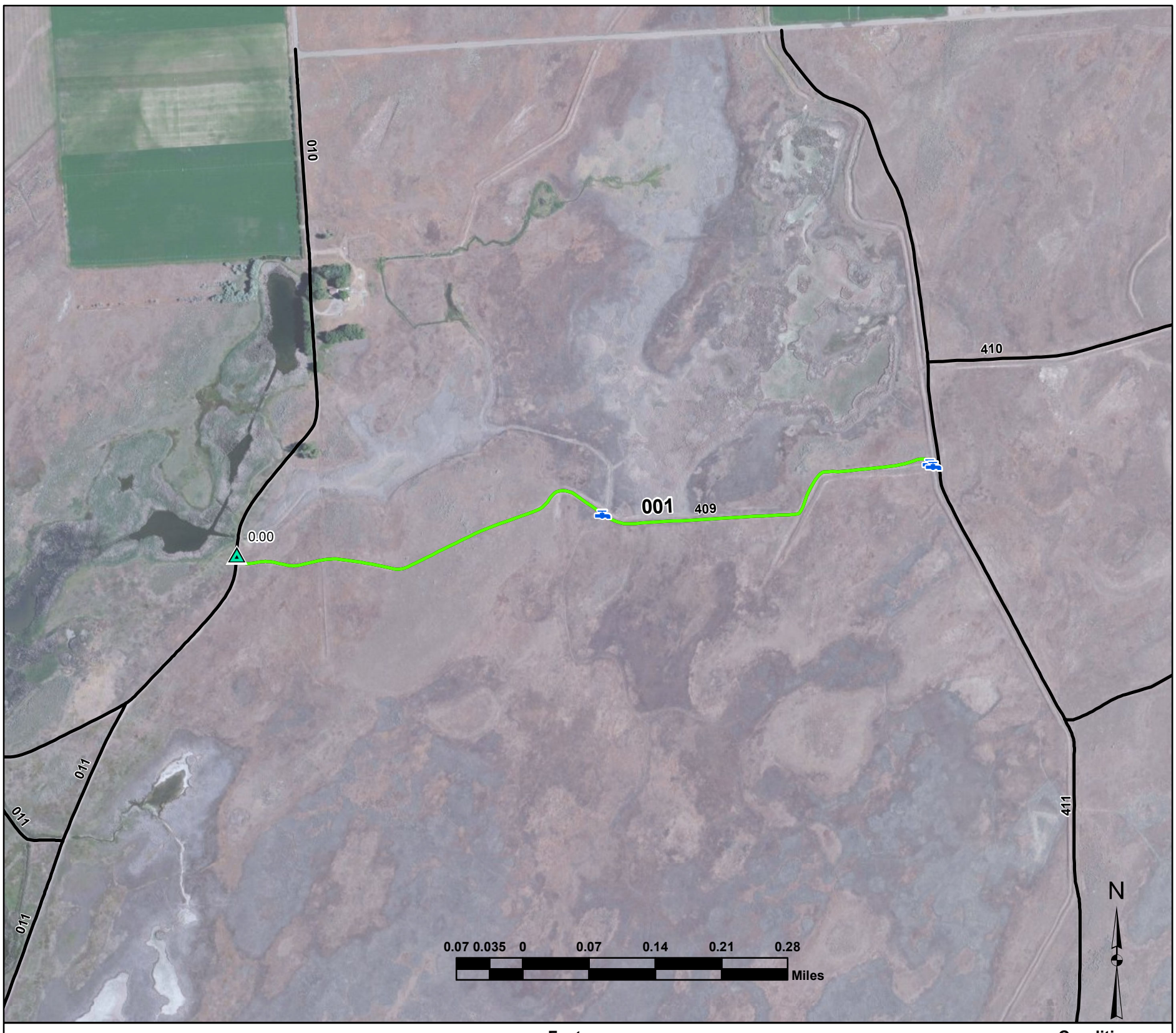
Route Number: 408

Total Route Mileage: 0.62

Asset Number	10064360				
Section Number	001				
Section Length (miles)	0.62				
Inspection Date	03-18-2013				
Surface Type	Gravel				
Number of Lanes	1				
Roadway Width (feet)	10				
Condition	Good				
Remaining Service Life (years)	5				
Estimated Cost to Repair	$900				
Current Replacement Value	$402,200				

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Water Control Structure	001-0.17						

ROUTE 409



Spring Pond Road

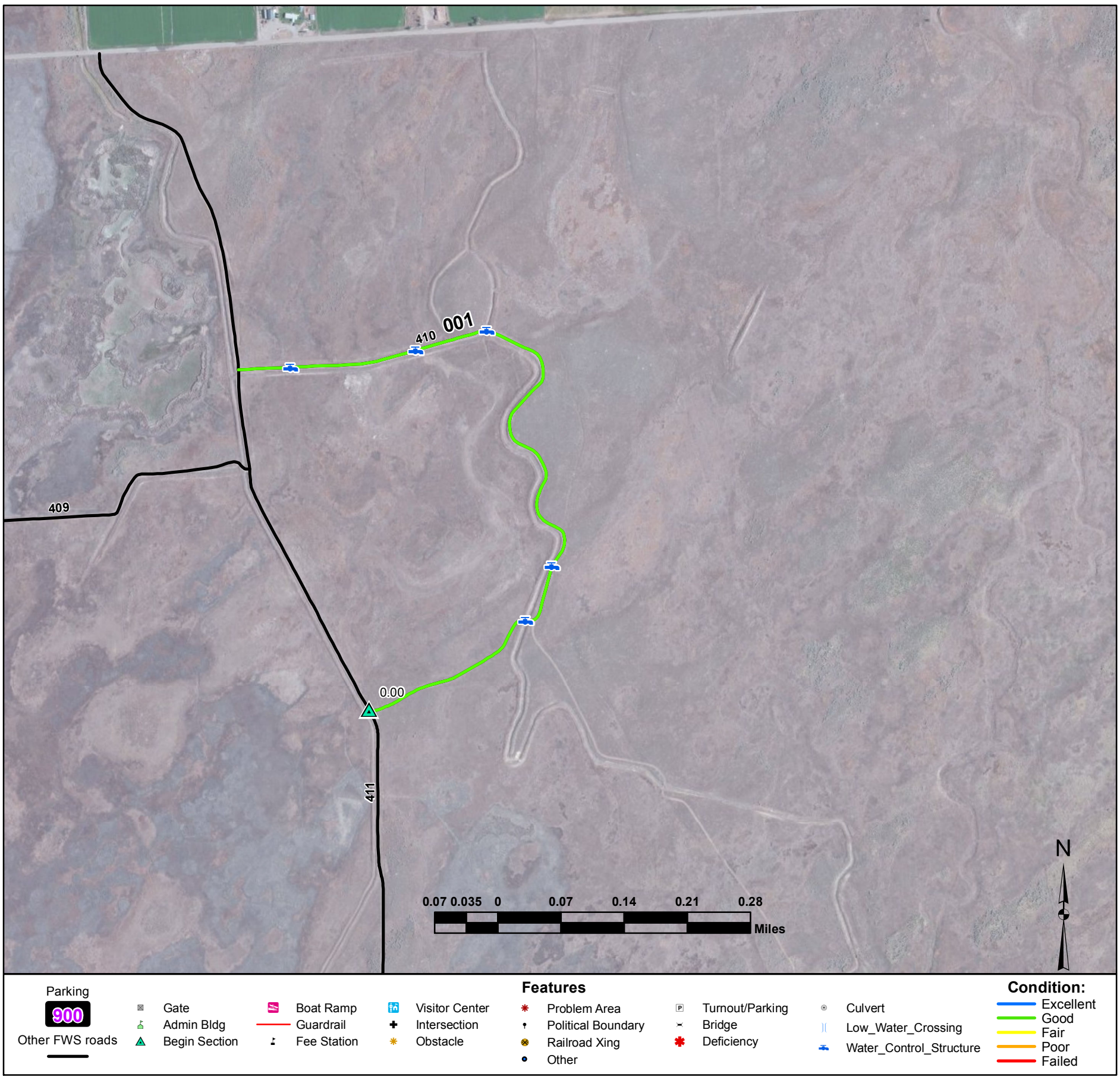
From Wildlife Viewing Route - Big Pond (Route 010) to Center Pond Loop Road (Route 411)

Route Number: 409

Total Route Mileage: 0.80

Asset Number	10064360				
Section Number	001				
Section Length (miles)	0.80				
Inspection Date	03-19-2013				
Surface Type	Gravel				
Number of Lanes	1				
Roadway Width (feet)	10				
Condition	Good				
Remaining Service Life (years)	5				
Estimated Cost to Repair	$1,200				
Current Replacement Value	$519,000				

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Water Control Structure	001-0.41						
Water Control Structure	001-0.79						
Water Control Structure	001-0.79						



Flat Pond Loop Road

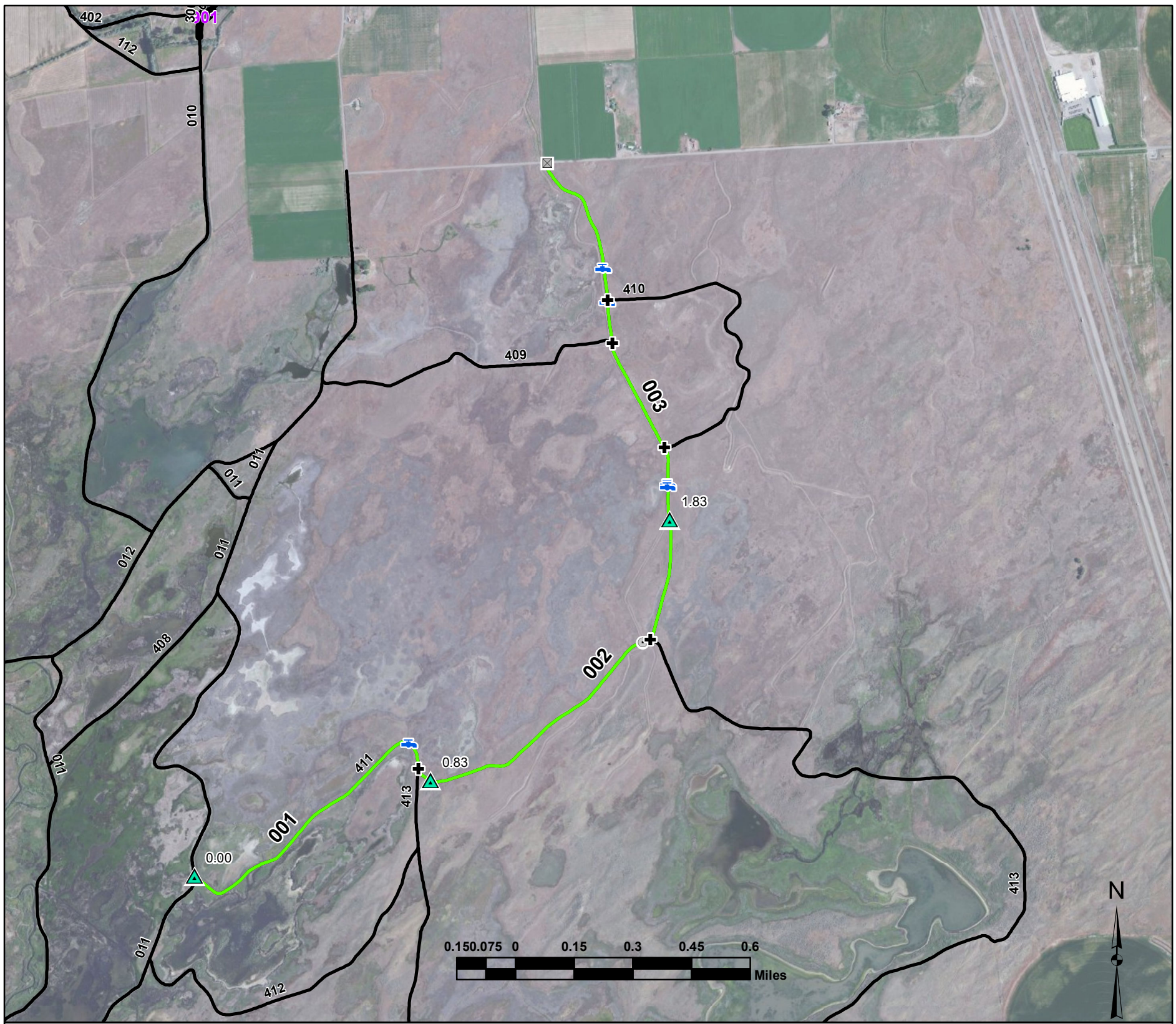
From Center Pond Loop Road (Route 411) to Center Pond Loop Road (Route 411)

Route Number: 410

Total Route Mileage: 0.91

Asset Number	10064360				
Section Number	001				
Section Length (miles)	0.91				
Inspection Date	03-19-2013				
Surface Type	Gravel				
Number of Lanes	1				
Roadway Width (feet)	10				
Condition	Good				
Remaining Service Life (years)	5				
Estimated Cost to Repair	$1,400				
Current Replacement Value	$590,300				

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Water Control Structure	001-0.21						
Water Control Structure	001-0.28						
Water Control Structure	001-0.6						
Water Control Structure	001-0.69						
Water Control Structure	001-0.84						



Center Pond Loop Road

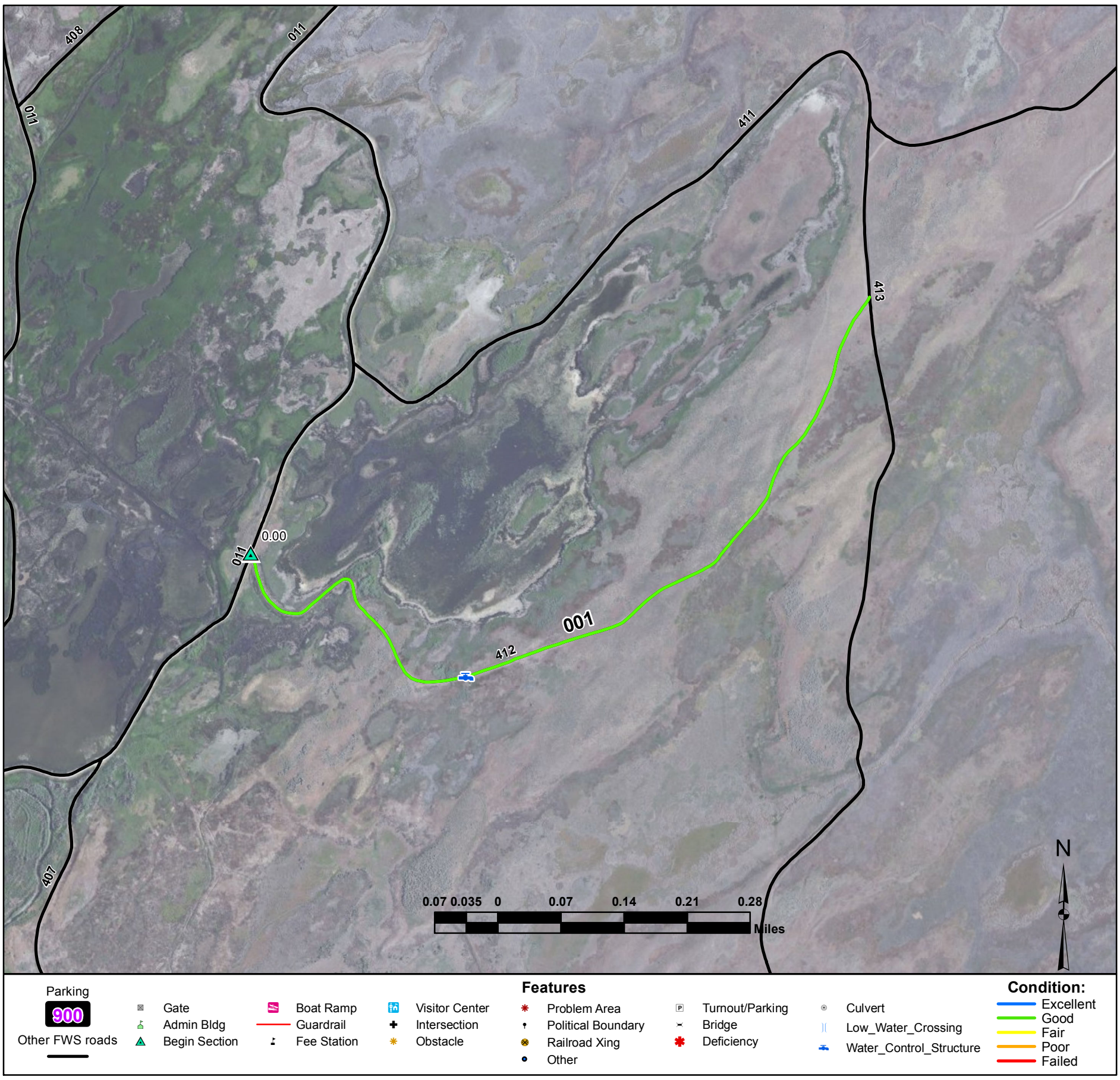
From Wildlife Viewing Route - Toomey Pond (Route 011) to refuge boundary

Route Number: 411

Total Route Mileage: 2.83

Asset Number	10064360	10064360	10064360		
Section Number	001	002	003		
Section Length (miles)	0.83	1.00	1.00		
Inspection Date	03-19-2013	03-19-2013	03-19-2013		
Surface Type	Gravel	Gravel	Gravel		
Number of Lanes	1	1	1		
Roadway Width (feet)	12	12	12		
Condition	Good	Good	Good		
Remaining Service Life (years)	5	5	5		
Estimated Cost to Repair	$1,300	$1,500	$1,500		
Current Replacement Value	$538,400	$648,700	$648,700		

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Intersection	001-0.04						
Water Control Structure	001-0.1						
Begin Section	002-0.83						
Culvert	002-1.54						
Intersection	002-1.56						
Begin Section	003-1.83						
Water Control Structure	003-1.91						
Water Control Structure	003-1.91						
Intersection	003-2.0						
Intersection	003-2.31						
Intersection	003-2.41						
Water Control Structure	003-2.41						
Water Control Structure	003-2.49						
Gate	003-2.83						



Two-Way Pond Road

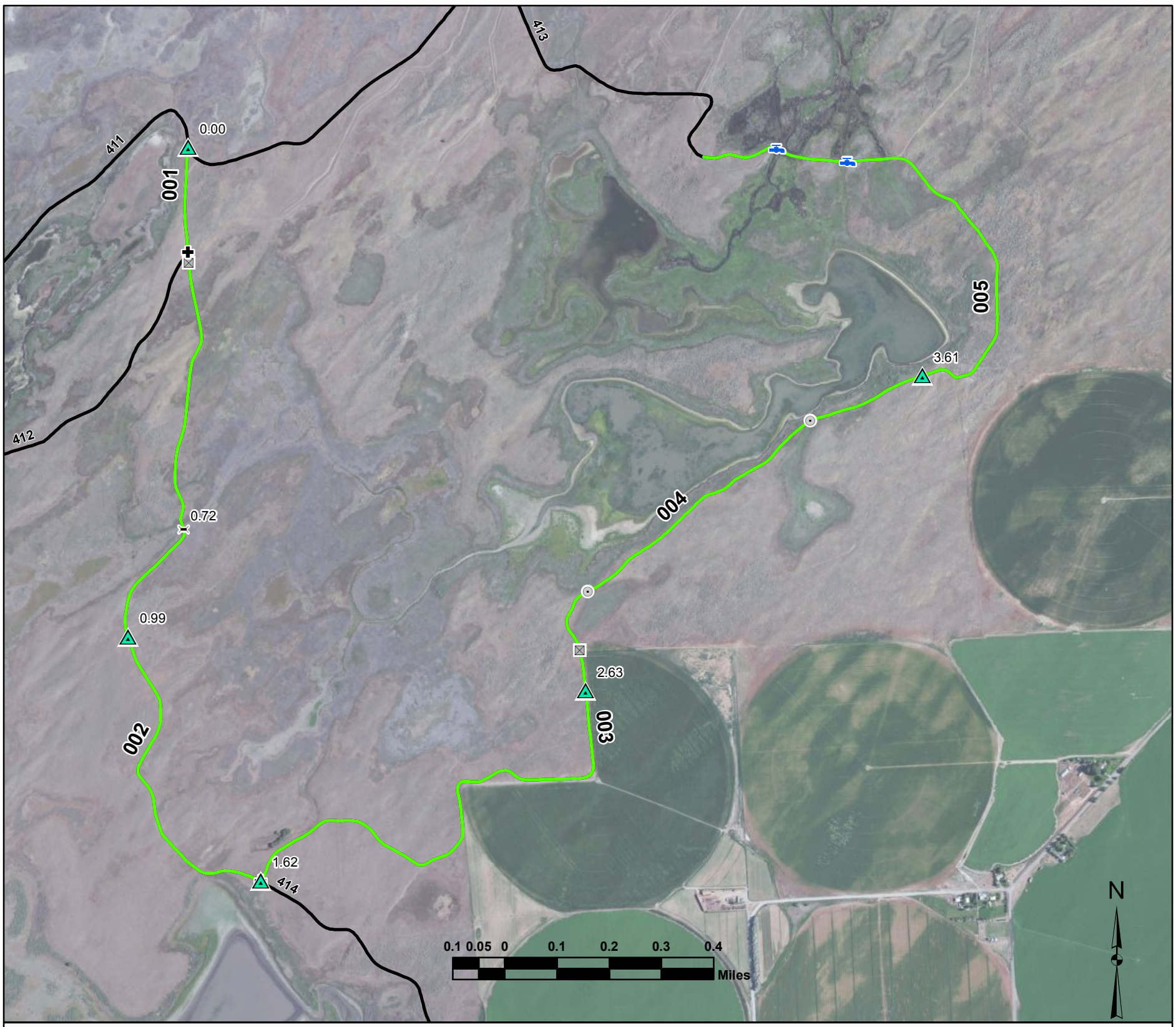
From Wildlife Viewing Route - Toomey Pond (Route 011) to Sandhole Lake Loop Road (Route 413)

Route Number: 412

Total Route Mileage: 1.00

Asset Number	10064360				
Section Number	001				
Section Length (miles)	1.00				
Inspection Date	03-19-2013				
Surface Type	Native				
Number of Lanes	1				
Roadway Width (feet)	10				
Condition	Good				
Remaining Service Life (years)	7				
Estimated Cost to Repair	$1,600				
Current Replacement Value	$335,600				

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Water Control Structure	001-0.34						



Sandhole Lake Loop Road

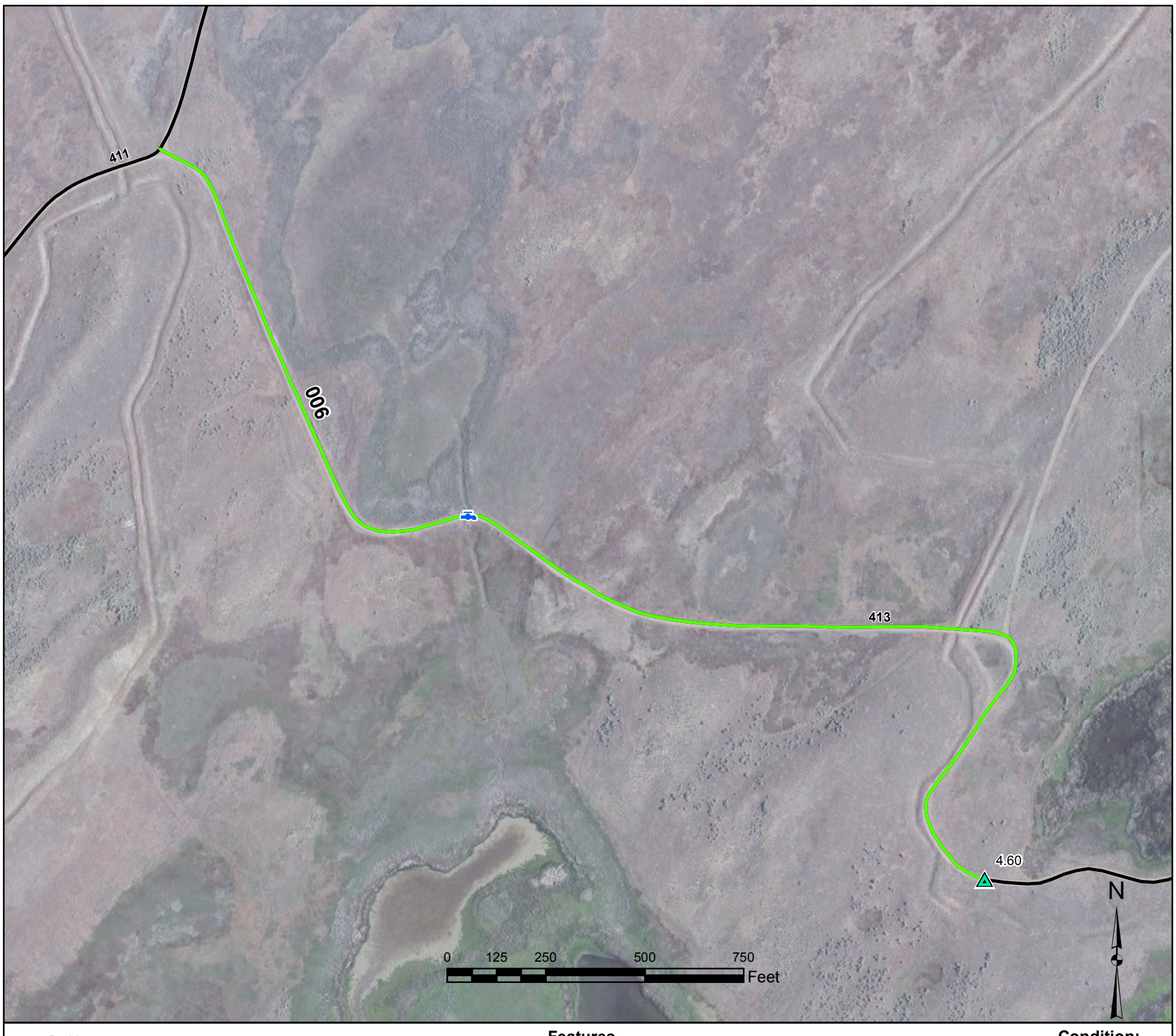
From Center Pond Loop Road (Route 411) to Center Pond Loop Road (Route 411)

Route Number: 413

Total Route Mileage: 5.27

Asset Number	10064360	10064360	10064360	10064360	10064360
Section Number	001	002	003	004	005
Section Length (miles)	0.99	0.63	1.01	0.98	0.99
Inspection Date	03-19-2013	03-19-2013	03-19-2013	03-19-2013	03-19-2013
Surface Type	Gravel	Gravel	Gravel	Gravel	Gravel
Number of Lanes	1	1	1	1	1
Roadway Width (feet)	12	12	12	12	10
Condition	Good	Good	Good	Good	Good
Remaining Service Life (years)	7	7	7	7	5
Estimated Cost to Repair	$1,500	$1,000	$1,500	$1,500	$1,500
Current Replacement Value	$642,200	$408,700	$655,200	$635,700	$642,200

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Intersection	001-0.19						
Cattle Guard	001-0.21						
Bridge	001-0.72						
Begin Section	002-0.99						
Begin Section	003-1.62						
Intersection	003-1.62						
Begin Section	004-2.63						
Cattle Guard	004-2.69						
Culvert	004-2.81						
Culvert	004-3.36						
Begin Section	005-3.61						
Water Control Structure	005-4.28						
Water Control Structure	005-4.43						



Sandhole Lake Loop Road

From Center Pond Loop Road (Route 411) to Center Pond Loop Road (Route 411)

Route Number: 413

Total Route Mileage: 5.27

Asset Number	10064360				
Section Number	006				
Section Length (miles)	0.67				
Inspection Date	03-19-2013				
Surface Type	Gravel				
Number of Lanes	1				
Roadway Width (feet)	12				
Condition	Good				
Remaining Service Life (years)	5				
Estimated Cost to Repair	$1,000				
Current Replacement Value	$434,600				

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	006-4.6						
Water Control Structure	006-5.02						

Eastside Rays Lake Access

From Sandhole Lake Loop Road (Route 413) to refuge boundary

Route Number: 414

Total Route Mileage: 0.80

Asset Number	10064360				
Section Number	001				
Section Length (miles)	0.80				
Inspection Date	03-19-2013				
Surface Type	Gravel				
Number of Lanes	1				
Roadway Width (feet)	12				
Condition	Good				
Remaining Service Life (years)	7				
Estimated Cost to Repair	$1,200				
Current Replacement Value	$519,000				

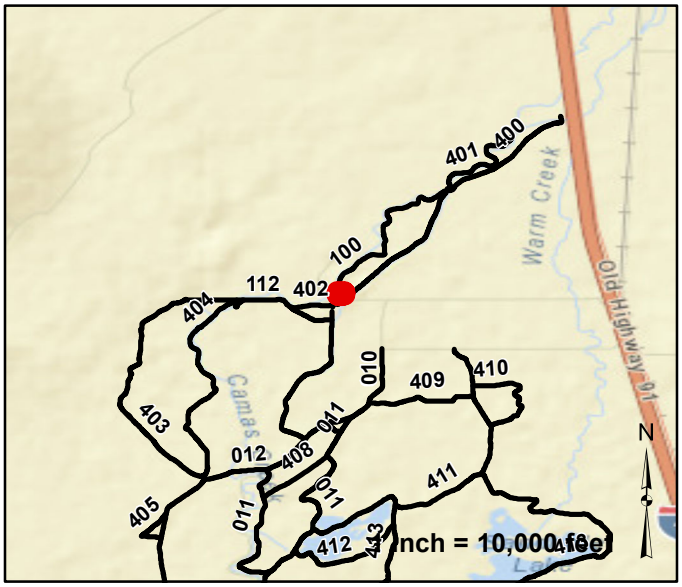
Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Cattle Guard	001-0.01						
Culvert	001-0.53						
Gate	001-0.8						

Route Number: 800

Shop Parking

From Shop Access Parking (Route 300)

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10048290	39920	15	Good	Gravel	$5,600	03-19-2013	$185,900



Parking

900

Other FWS roads

Features

Gate
Admin Bldg
Begin Section
Boat Ramp
Guardrail
Fee Station
Visitor Center
Other
Problem Area
Culvert
Low_Water_Crossing
Water_Control_Structure

Condition:

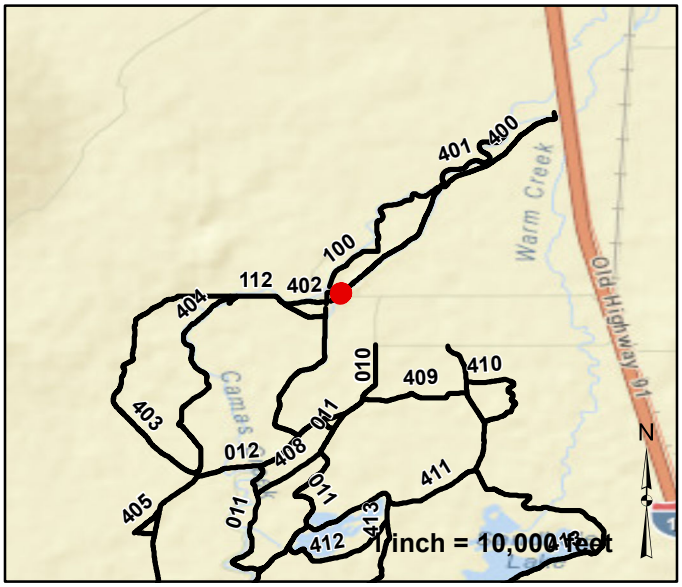
Excellent
Good
Fair
Poor
Failed

Route Number: 900

North Headquarters Hunter Access Parking

From Well #4 Loop (Route 100)

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10048290	1901	4	Fair	Gravel	$500	03-19-2013	$8,900



Parking

900

Other FWS roads

Features

- Gate
- Admin Bldg
- Begin Section
- Boat Ramp
- Guardrail
- Fee Station
- Visitor Center
- Other
- Problem Area
- Culvert
- Low_Water_Crossing
- Water_Control_Structure

Condition:

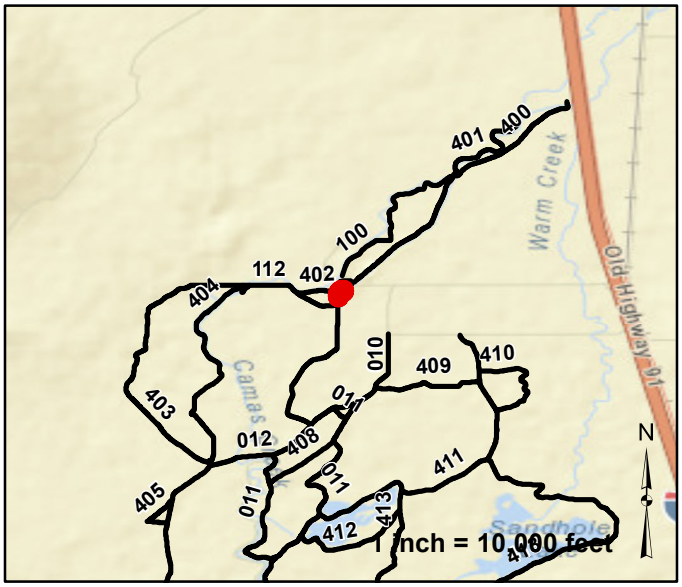
- Excellent
- Good
- Fair
- Poor
- Failed

Route Number: 901

Visitor Parking

From Headquarters Entrance Road (Route 013)

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
-	15311	13	Good	Asphalt	$2,700	03-19-2013	$130,600



Parking

900

Other FWS roads

Features

- Gate
- Admin Bldg
- Begin Section
- Boat Ramp
- Guardrail
- Fee Station
- Visitor Center
- Other
- Problem Area
- Culvert
- Low_Water_Crossing
- Water_Control_Structure

Condition:

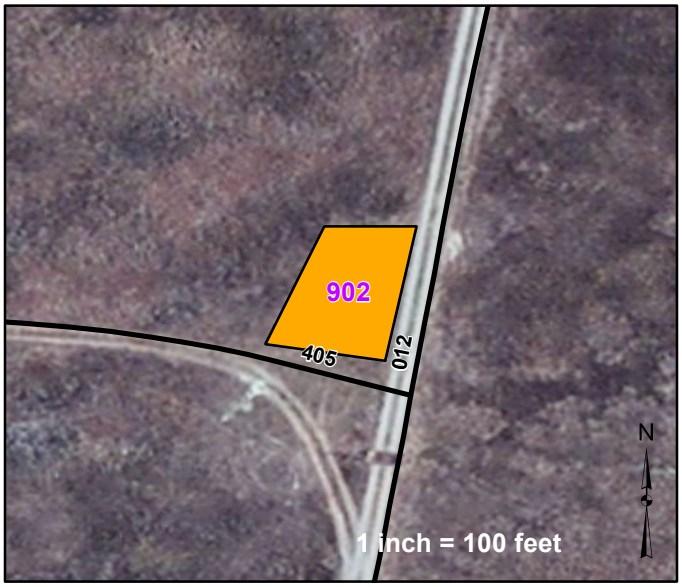
- Excellent
- Good
- Fair
- Poor
- Failed

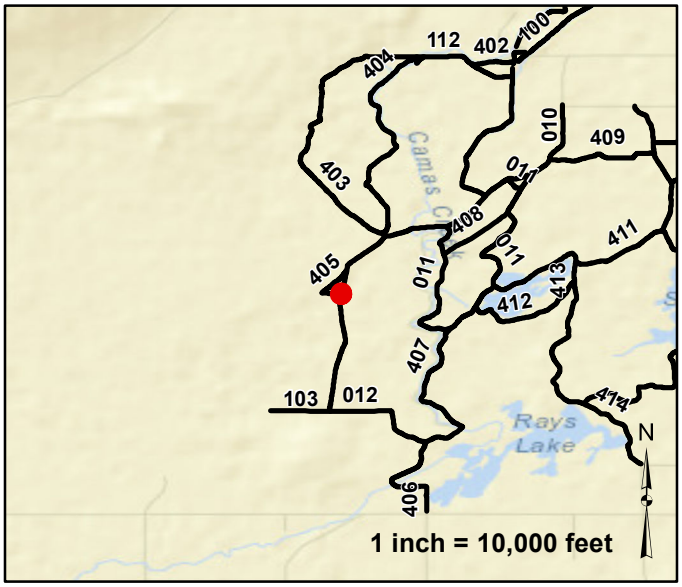
Route Number: 902

Hunter Access Parking #1

From Hunter Access Road (Route 012)

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10051553	2698	5	Poor	Native	$2,100	03-18-2013	$5,400





Parking

900

Other FWS roads

Gate

Admin Bldg

Begin Section

Features

Boat Ramp

Guardrail

Fee Station

Visitor Center

Other

Problem Area

Culvert

Low_Water_Crossing

Water_Control_Structure

Condition:

Excellent

Good

Fair

Poor

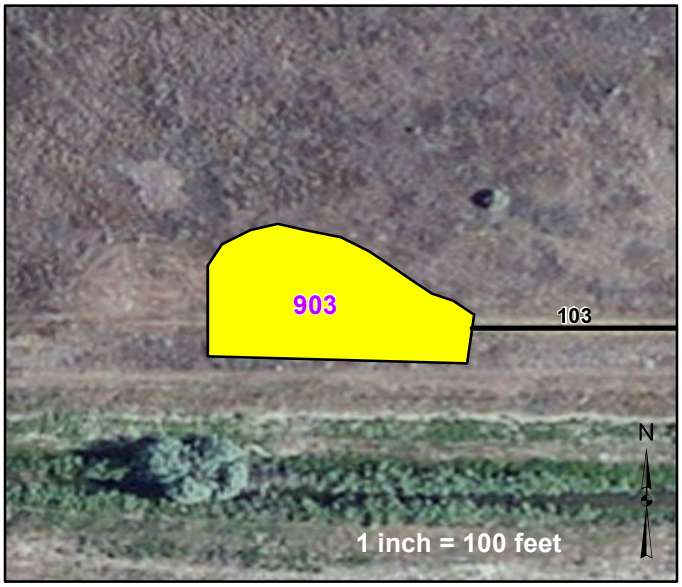
Failed

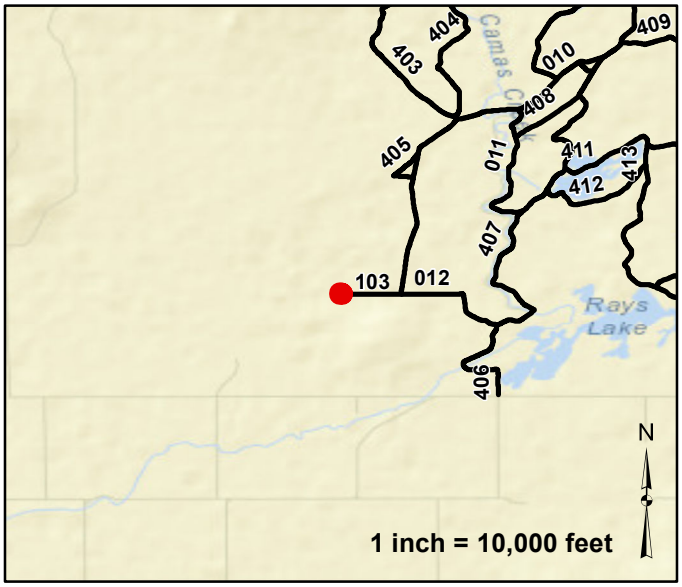
Route Number: 903

Independent Hunter Access Parking

From Independent Hunter Accessd Road (Route 103)

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10051554	5443	5	Fair	Gravel	$1,400	03-18-2013	$25,300





Parking

900

Other FWS roads

Gate

Admin Bldg

Begin Section

Features

Boat Ramp

Guardrail

Fee Station

Visitor Center

Other

Problem Area

Culvert

Low_Water_Crossing

Water_Control_Structure

Condition:

Excellent

Good

Fair

Poor

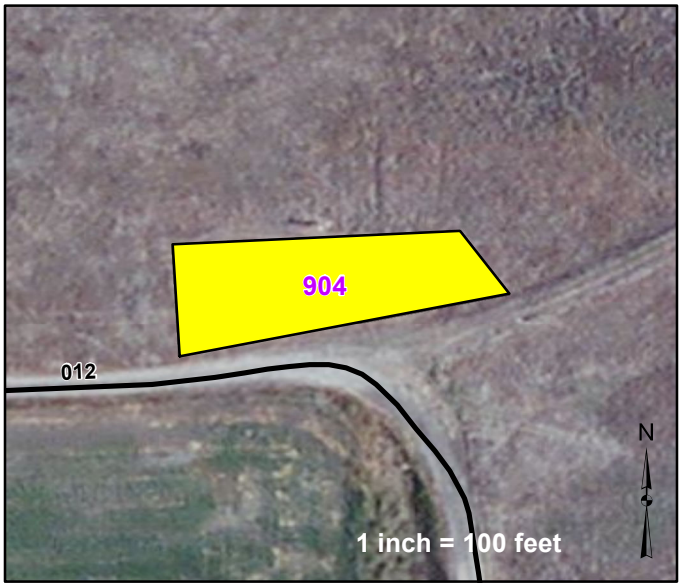
Failed

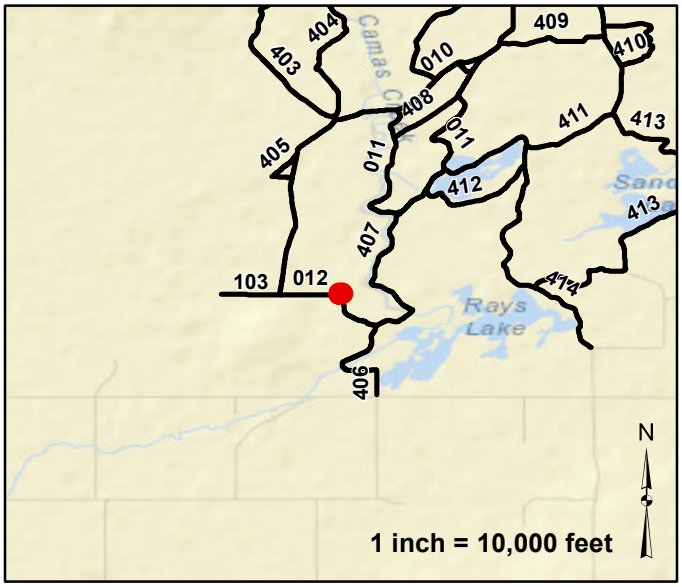
Route Number: 904

Hunter Access Parking #2

From Hunter Access Road (Route 012)

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10051555	5494	12	Fair	Native	$1,400	03-18-2013	$11,000





Parking

900

Other FWS roads

Features

- Gate
- Admin Bldg
- Begin Section
- Boat Ramp
- Guardrail
- Fee Station
- Visitor Center
- Other
- Problem Area
- Culvert
- Low_Water_Crossing
- Water_Control_Structure

Condition:

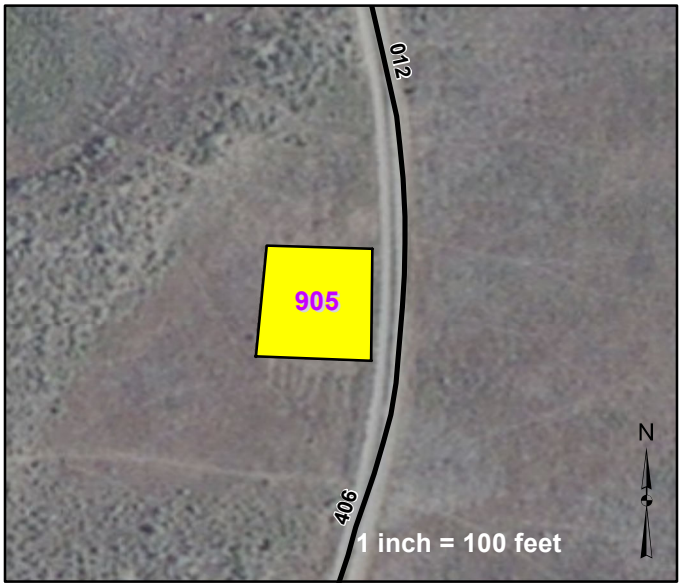
- Excellent
- Good
- Fair
- Poor
- Failed

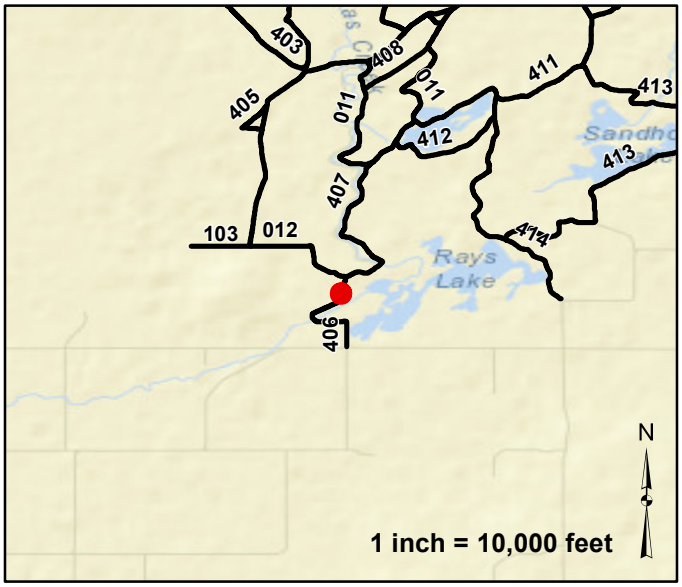
Route Number: 905

Hunter Access Parking #3

From Hunter Access Road (Route 012)

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10051588	2418	6	Fair	Native	$600	03-18-2013	$4,900





Parking

900

Other FWS roads

Gate

Admin Bldg

Begin Section

Features

Boat Ramp

Guardrail

Fee Station

Visitor Center

Other

Problem Area

Culvert

Low_Water_Crossing

Water_Control_Structure

Condition:

Excellent

Good

Fair

Poor

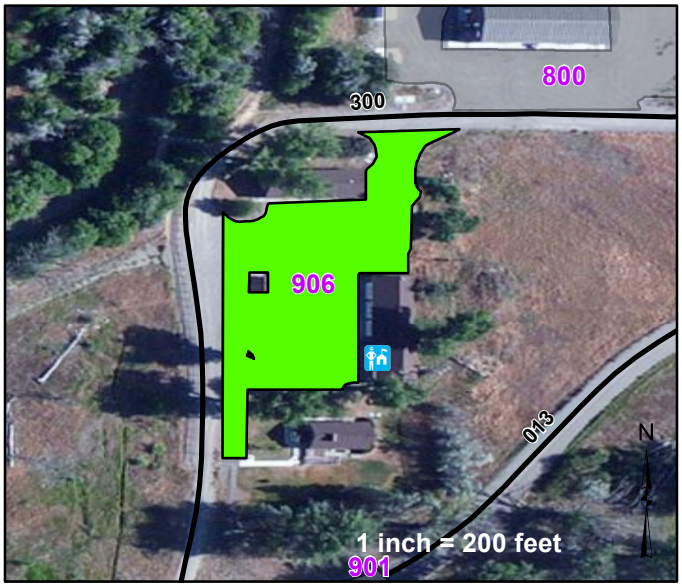
Failed

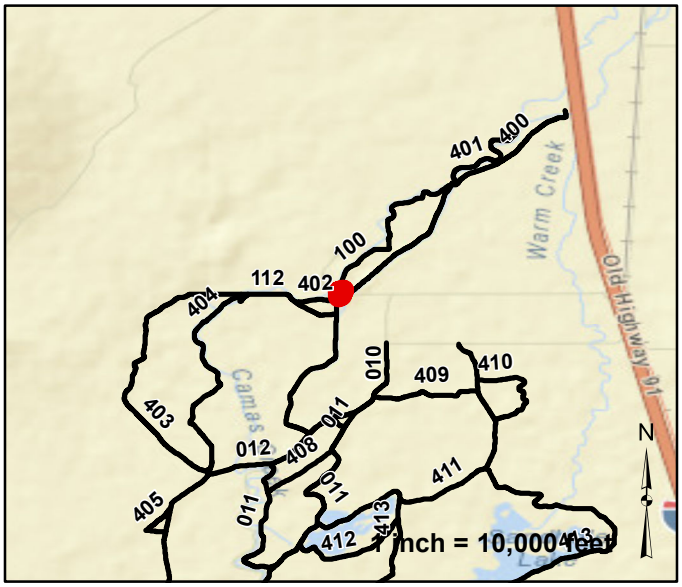
Route Number: 906

Office Parking

From Shop Access Road (Route 300)

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
-	26068	15	Good	Gravel	$3,700	03-19-2013	$121,400





Parking

900

Other FWS roads

Gate

Admin Bldg

Begin Section

Features

Boat Ramp

Guardrail

Fee Station

Visitor Center

Other

Problem Area

Culvert

Low_Water_Crossing

Water_Control_Structure

Condition:

Excellent

Good

Fair

Poor

Failed

Camas Bridge Inventory					
Rte #	Milepost	NBIS #	Sufficiency Rating	Functionally Obsolete	Structurally Deficient
12	0.65	14611-000291	599	N	Y
400	1.11	NA	NA	NA	NA
401	0	14611-000951	729	N	Y
403	0.02	14611-000311	739	N	N
406	0.35	14611-000271	729	N	Y
407	0.34	14611-000281	413	N	N
413	0.72	NA	NA	NA	NA

ROUTE: 010

Features Photographs

Photo: CAMA_C4_0476 Route: 010-001-0.0
Begin Section

Photo: CAMA_C4_0477 Route: 010-001-0.01
Metal Culvert 20ft long 12in dia. 2ft deep

Photo: CAMA_C4_0478 Route: 010-001-0.01
Metal Culvert 20ft long 12in dia. 2ft deep

Photo: CAMA_C4_0479 Route: 010-001-0.07
Metal WCS Flashboard Riser 60ft long 36in dia. 3ft deep

Photo: CAMA_C4_0480 Route: 010-001-0.07
Metal WCS Flashboard Riser 60ft long 36in dia. 3ft deep

Photo: CAMA_C4_0481 Route: 010-001-0.58
Metal WCS Flashboard Riser 40ft long 24in dia. 2ft deep

Features Photographs

Photo: CAMA_C4_0482 Route: 010-001-0.58
Metal WCS Flashboard Riser 40ft long 24in dia. 2ft deep

Photo: CAMA_C4_0483 Route: 010-001-0.73
Metal WCS Flashboard Riser 50ft long 36in dia. 3ft deep

Photo: CAMA_C4_0484 Route: 010-001-0.73
Metal WCS Flashboard Riser 50ft long 36in dia. 3ft deep

Photo: CAMA_C4_0485 Route: 010-002-0.99
Begin Section

Photo: CAMA_C4_0486 Route: 010-002-1.26
Metal WCS Flashboard Riser 40ft long 24in dia. 3ft deep

Photo: CAMA_C4_0487 Route: 010-002-1.26
Metal WCS Flashboard Riser 40ft long 24in dia. 3ft deep

Features Photographs

Photo: CAMA_C4_0488 Route: 010-002-1.7
Metal WCS Flashboard Riser 50ft long 48in dia. 3ft deep

Photo: CAMA_C4_0489 Route: 010-002-1.7
Metal WCS Flashboard Riser 50ft long 48in dia. 3ft deep

Photo: CAMA_C4_0490 Route: 010-003-1.98
Begin Section

Photo: CAMA_C4_0491 Route: 010-003-2.13
Metal WCS Flashboard Riser 50ft long 24in dia. 3ft deep

Photo: CAMA_C4_0492 Route: 010-003-2.13
Metal WCS Flashboard Riser 50ft long 24in dia. 3ft deep

Photo: CAMA_C4_0493 Route: 010-003-2.42
Concrete Culvert 20ft long 36in dia. 3ft deep

ROUTE: 010

Features Photographs

Photo: CAMA_C4_0494 Route: 010-003-2.42
Concrete Culvert 20ft long 36in dia. 3ft deep

Photo: CAMA_C4_0495 Route: 010-003-2.64
Metal Open Rail Gate

Features Photographs

Photo: CAMA_C4_0541 Route: 011-001-0.39
Begin Section

Photo: CAMA_C4_0542 Route: 011-001-0.64
Concrete WCS Screw Gate 40ft long 48in dia. 6ft deep

Photo: CAMA_C4_0543 Route: 011-001-0.64
Concrete WCS Screw Gate 40ft long 48in dia. 6ft deep

Photo: CAMA_C4_0544 Route: 011-002-0.98
Begin Section

Photo: CAMA_C4_0545 Route: 011-002-1.56
Metal WCS Flashboard Riser 50ft long 36in dia. 3ft deep

Photo: CAMA_C4_0546 Route: 011-002-1.56
Metal WCS Flashboard Riser 50ft long 36in dia. 3ft deep

ROUTE: 011

Features Photographs

Photo: CAMA_C4_0547 Route: 011-002-1.74
Metal WCS Flashboard Riser 50ft long 36in dia. 3ft deep

Photo: CAMA_C4_0548 Route: 011-002-1.74
Metal WCS Flashboard Riser 50ft long 36in dia. 3ft deep

Photo: CAMA_C4_0549 Route: 011-003-1.96
Begin Section

Photo: CAMA_C4_0550 Route: 011-003-1.96
Metal WCS Flashboard Riser 40ft long 36in dia. 3ft deep

Photo: CAMA_C4_0551 Route: 011-003-1.96
Metal WCS Flashboard Riser 40ft long 36in dia. 3ft deep

Photo: CAMA_C4_0552 Route: 011-003-2.48
Metal WCS Flashboard Riser 40ft long 36in dia. 3ft deep

ROUTE: 011

Features Photographs

Photo: CAMA_C4_0553 Route: 011-003-2.48
Metal WCS Flashboard Riser 40ft long 36in dia. 3ft deep

Photo: CAMA_C4_0554 Route: 011-004-2.97
Begin Section

Photo: CAMA_C4_0555 Route: 011-004-3.02
Metal WCS Flashboard Riser 50ft long 48in dia. 3ft deep

Photo: CAMA_C4_0556 Route: 011-004-3.02
Metal WCS Flashboard Riser 50ft long 48in dia. 3ft deep

Photo: CAMA_C4_0557 Route: 011-005-3.02
Begin Section

Photo: CAMA_C4_0558 Route: 011-005-3.06
Metal WCS Flashboard Riser 40ft long 36in dia. 3ft deep

ROUTE: 011

Features Photographs

Photo: CAMA_C4_0559 Route: 011-005-3.06
Metal WCS Flashboard Riser 40ft long 36in dia. 3ft deep

Features Photographs

Photo: CAMA_C4_0498 Route: 012-001-0.0
Begin Section

Photo: CAMA_C4_0499 Route: 012-001-0.64
Metal Cattle Guard

Photo: CAMA_C4_0500 Route: 012-001-0.65
Wood Bridge NBIS:14611-000291
See CAMA_C4_0501, CAMA_C4_0502

Photo: CAMA_C4_0503 Route: 012-002-0.66
Begin Section

Photo: CAMA_C4_0504 Route: 012-002-0.89
Metal Culvert 30ft long 30in dia. 2ft deep

Photo: CAMA_C4_0505 Route: 012-002-0.89
Metal Culvert 30ft long 30in dia. 2ft deep

Features Photographs

Photo: CAMA_C4_0509 Route: 012-002-1.56
Metal Cattle Guard

Photo: CAMA_C4_0514 Route: 012-003-1.59
Begin Section

Photo: CAMA_C4_0515 Route: 012-004-2.58
Begin Section

Photo: CAMA_C4_0521 Route: 012-005-3.58
Begin Section

Photo: CAMA_C4_0522 Route: 012-005-3.6
Concrete Culvert 20ft long 36in dia. 3ft deep

Photo: CAMA_C4_0523 Route: 012-005-3.6
Concrete Culvert 20ft long 36in dia. 3ft deep

ROUTE: 013

Features Photographs

Photo: CAMA_C4_0638 Route: 013-001-0.0
Begin Section

ROUTE: 100

Features Photographs

Photo: CAMA_C4_0409 Route: 100-001-0.0
Begin Section

Photo: CAMA_C4_0410 Route: 100-001-0.0
Metal Cable Gate

Photo: CAMA_C4_0411 Route: 100-002-0.87
Begin Section

Photo: CAMA_C4_0412 Route: 100-002-1.0
Metal WCS Flashboard Riser 20ft long 36in dia. 3ft deep

Photo: CAMA_C4_0413 Route: 100-002-1.0
Metal WCS Flashboard Riser 20ft long 36in dia. 3ft deep

Photo: CAMA_C4_0414 Route: 100-002-1.05
Metal WCS Screw Gate 45ft long 24in dia. 2ft deep

Features Photographs

Photo: CAMA_C4_0415 Route: 100-002-1.05
Metal WCS Screw Gate 45ft long 24in dia. 2ft deep

Photo: CAMA_C4_0429 Route: 100-003-1.89
Begin Section

Photo: CAMA_C4_0432 Route: 100-003-2.74
Metal Open Rail Gate

Features Photographs

Photo: CAMA_C4_0516 Route: 103-001-0.0
Begin Section

Features Photographs

Photo: CAMA_C4_0434 Route: 112-001-0.0
Begin Section

Photo: CAMA_C4_0435 Route: 112-001-0.11
Metal WCS Flashboard Riser 30ft long 36in dia. 2ft deep

Photo: CAMA_C4_0436 Route: 112-001-0.11
Metal WCS Flashboard Riser 30ft long 36in dia. 2ft deep

Photo: CAMA_C4_0437 Route: 112-001-0.3
Metal Culvert 30ft long 30in dia. 1ft deep

Photo: CAMA_C4_0438 Route: 112-001-0.3
Metal Culvert 30ft long 30in dia. 1ft deep

Features Photographs

Photo: CAMA_C4_0630 Route: 300-001-0.0
Begin Section

Photo: CAMA_C4_0631 Route: 300-001-0.0
Metal Open Rail Gate

Photo: CAMA_C4_0632 Route: 300-001-0.01
Plastic Culvert 40ft long 12in dia. 1ft deep

Photo: CAMA_C4_0633 Route: 300-001-0.01
Plastic Culvert 40ft long 12in dia. 1ft deep

Features Photographs

Photo: CAMA_C4_0419 Route: 400-001-0.0
Begin Section

Photo: CAMA_C4_0417 Route: 400-001-0.01
Concrete WCS Screw Gate 30ft long Nonein dia. 1ft deep 8x8 box

Photo: CAMA_C4_0418 Route: 400-001-0.01
Concrete WCS Screw Gate 30ft long Nonein dia. 1ft deep 8x8 box

Photo: CAMA_C4_0420 Route: 400-002-0.97
Begin Section

Photo: CAMA_C4_0421 Route: 400-002-1.11
Wood Bridge NBIS:NA
See CAMA_C4_0422, CAMA_C4_0423

Features Photographs

Photo: CAMA_C4_0426 Route: 401-001-0.0
Wood Bridge NBIS:14611-000951

Photo: CAMA_C4_0425 Route: 401-001-0.0
Begin Section

Photo: CAMA_C4_0427 Route: 401-001-0.0
Concrete WCS Other 20ft long Nonein dia. 1ft deep
15x30 rotary gate

Photo: CAMA_C4_0428 Route: 401-001-0.0
Concrete WCS Other 20ft long Nonein dia. 1ft deep
15x30 rotary gate

ROUTE: 402

Features Photographs

Photo: CAMA_C4_0433 Route: 402-001-0.0
Begin Section

Features Photographs

Photo: CAMA_C4_0443 Route: 403-001-0.0
Begin Section

Photo: CAMA_C4_0444 Route: 403-001-0.02
Wood Bridge NBIS:14611-000311
See CAMA_C4_0445, CAMA_C4_0446

Photo: CAMA_C4_0447 Route: 403-002-0.43
Begin Section

Photo: CAMA_C4_0448 Route: 403-003-1.38
Begin Section

Photo: CAMA_C4_0449 Route: 403-004-1.74
Begin Section

Photo: CAMA_C4_0450 Route: 403-005-1.98
Begin Section

Features Photographs

Photo: CAMA_C4_0451 Route: 404-001-0.0
Begin Section

Photo: CAMA_C4_0452 Route: 404-001-0.61
Metal WCS Flashboard Riser 50ft long 48in dia. 1ft deep
Elliptical

Photo: CAMA_C4_0453 Route: 404-001-0.61
Metal WCS Flashboard Riser 50ft long 48in dia. 1ft deep
Elliptical

Photo: CAMA_C4_0454 Route: 404-002-0.6
Begin Section

Photo: CAMA_C4_0455 Route: 404-002-0.97
Metal WCS Flashboard Riser 30ft long 48in dia. 1ft deep

Photo: CAMA_C4_0456 Route: 404-002-0.97
Metal WCS Flashboard Riser 30ft long 48in dia. 1ft deep

Features Photographs

Photo: CAMA_C4_0457 Route: 404-002-1.32
Metal WCS Flashboard Riser 50ft long 30in dia. 4ft deep

Photo: CAMA_C4_0458 Route: 404-002-1.32
Metal WCS Flashboard Riser 50ft long 30in dia. 4ft deep

Photo: CAMA_C4_0459 Route: 404-003-1.61
Begin Section

Photo: CAMA_C4_0460 Route: 404-003-1.74
Metal WCS Flashboard Riser 25ft long 36in dia. 3ft deep

Photo: CAMA_C4_0461 Route: 404-003-1.74
Metal WCS Flashboard Riser 25ft long 36in dia. 3ft deep

Features Photographs

Photo: CAMA_C4_0506 Route: 405-001-0.0
Begin Section

Photo: CAMA_C4_0507 Route: 405-001-0.29
Metal Open Rail Gate

Photo: CAMA_C4_0508 Route: 405-002-0.28
Begin Section

Features Photographs

Photo: CAMA_C4_0526 Route: 406-001-0.0
Begin Section

Photo: CAMA_C4_0527 Route: 406-001-0.35
Wood Bridge NBIS:14611-000271
See CAMA_C4_0528, CAMA_C4_0529

Photo: CAMA_C4_0530 Route: 406-001-0.84
Metal Open Rail Gate

Features Photographs

Photo: CAMA_C4_0531 Route: 407-001-0.0
Begin Section

Photo: CAMA_C4_0532 Route: 407-001-0.01
Metal Open Rail Gate

Photo: CAMA_C4_0533 Route: 407-001-0.34
Wood Bridge NBIS:14611-000281
See CAMA_C4_0534, CAMA_C4_0535

Photo: CAMA_C4_0536 Route: 407-001-0.41
Metal Cattle Guard

Photo: CAMA_C4_0537 Route: 407-001-0.42
Metal WCS Flashboard Riser 50ft long 24in dia. 3ft deep

Photo: CAMA_C4_0538 Route: 407-001-0.42
Metal WCS Flashboard Riser 50ft long 24in dia. 3ft deep

Features Photographs

Photo: CAMA_C4_0539 Route: 407-002-0.97
Begin Section

Photo: CAMA_C4_0540 Route: 407-002-1.43
Metal Cattle Guard

Features Photographs

Photo: CAMA_C4_0560 Route: 408-001-0.0
Begin Section

Photo: CAMA_C4_0561 Route: 408-001-0.17
Metal WCS Flashboard Riser 50ft long 36in dia. 3ft deep

Photo: CAMA_C4_0562 Route: 408-001-0.17
Metal WCS Flashboard Riser 50ft long 36in dia. 3ft deep

ROUTE: 409

Features Photographs

Photo: CAMA_C4_0565 Route: 409-001-0.0
Begin Section

Photo: CAMA_C4_0566 Route: 409-001-0.41
Metal WCS Flashboard Riser 30ft long 36in dia. 3ft deep

Photo: CAMA_C4_0567 Route: 409-001-0.41
Metal WCS Flashboard Riser 30ft long 36in dia. 3ft deep

Photo: CAMA_C4_0568 Route: 409-001-0.79
Metal WCS Flashboard Riser 40ft long 36in dia. 2ft deep

Photo: CAMA_C4_0569 Route: 409-001-0.79
Metal WCS Flashboard Riser 40ft long 36in dia. 2ft deep

Photo: CAMA_C4_0570 Route: 409-001-0.79
Metal WCS Flashboard Riser 20ft long 36in dia. 2ft deep

ROUTE: 409

Features Photographs

Photo: CAMA_C4_0571 Route: 409-001-0.79
Metal WCS Flashboard Riser 20ft long 36in dia. 2ft deep

ROUTE: 410

Features Photographs

Photo: CAMA_C4_0572 Route: 410-001-0.0
Begin Section

Photo: CAMA_C4_0573 Route: 410-001-0.21
Metal WCS Flashboard Riser 30ft long 36in dia. 1ft deep

Photo: CAMA_C4_0574 Route: 410-001-0.21
Metal WCS Flashboard Riser 30ft long 36in dia. 1ft deep

Photo: CAMA_C4_0575 Route: 410-001-0.28
Metal WCS Flashboard Riser 40ft long 18in dia. 3ft deep

Photo: CAMA_C4_0576 Route: 410-001-0.28
Metal WCS Flashboard Riser 40ft long 18in dia. 3ft deep

Photo: CAMA_C4_0577 Route: 410-001-0.6
Metal WCS Flashboard Riser 20ft long 24in dia. 4ft deep

Features Photographs

Photo: CAMA_C4_0578 Route: 410-001-0.6
Metal WCS Flashboard Riser 20ft long 24in dia. 4ft deep

Photo: CAMA_C4_0579 Route: 410-001-0.69
Metal WCS Flashboard Riser 30ft long 24in dia. 5ft deep

Photo: CAMA_C4_0580 Route: 410-001-0.69
Metal WCS Flashboard Riser 30ft long 24in dia. 5ft deep

Photo: CAMA_C4_0581 Route: 410-001-0.84
Metal WCS Flashboard Riser 40ft long 24in dia. 4ft deep

Photo: CAMA_C4_0582 Route: 410-001-0.84
Metal WCS Flashboard Riser 40ft long 24in dia. 4ft deep

Features Photographs

Photo: CAMA_C4_0598 Route: 411-001-0.0
Begin Section

Photo: CAMA_C4_0596 Route: 411-001-0.1
Metal WCS Flashboard Riser 50ft long 36in dia. 4ft deep

Photo: CAMA_C4_0597 Route: 411-001-0.1
Metal WCS Flashboard Riser 50ft long 36in dia. 4ft deep

Photo: CAMA_C4_0595 Route: 411-002-0.83
Begin Section

Photo: CAMA_C4_0593 Route: 411-002-1.54
Metal Culvert 30ft long 36in dia. 1ft deep

Photo: CAMA_C4_0594 Route: 411-002-1.54
Metal Culvert 30ft long 36in dia. 1ft deep

Features Photographs

Photo: CAMA_C4_0592 Route: 411-003-1.83
Begin Section

Photo: CAMA_C4_0588 Route: 411-003-1.91
Metal WCS Flashboard Riser 20ft long 24in dia. 3ft deep

Photo: CAMA_C4_0589 Route: 411-003-1.91
Metal WCS Flashboard Riser 20ft long 24in dia. 3ft deep

Photo: CAMA_C4_0590 Route: 411-003-1.91
Metal WCS Flashboard Riser 90ft long 36in dia. 7ft deep

Photo: CAMA_C4_0591 Route: 411-003-1.91
Metal WCS Flashboard Riser 90ft long 36in dia. 7ft deep

Photo: CAMA_C4_0586 Route: 411-003-2.41
Metal WCS Flashboard Riser 20ft long 36in dia. 3ft deep

Features Photographs

Photo: CAMA_C4_0587 Route: 411-003-2.41
Metal WCS Flashboard Riser 20ft long 36in dia. 3ft deep

Photo: CAMA_C4_0584 Route: 411-003-2.49
Metal WCS Flashboard Riser 90ft long 36in dia. 4ft deep

Photo: CAMA_C4_0585 Route: 411-003-2.49
Metal WCS Flashboard Riser 90ft long 36in dia. 4ft deep

Photo: CAMA_C4_0583 Route: 411-003-2.83
Metal Open Rail Gate

Features Photographs

Photo: CAMA_C4_0599 Route: 412-001-0.0
Begin Section

Photo: CAMA_C4_0600 Route: 412-001-0.34
Metal WCS Flashboard Riser 20ft long 36in dia. 3ft deep

Photo: CAMA_C4_0601 Route: 412-001-0.34
Metal WCS Flashboard Riser 20ft long 36in dia. 3ft deep

Features Photographs

Photo: CAMA_C4_0602 Route: 413-001-0.0
Begin Section

Photo: CAMA_C4_0603 Route: 413-001-0.21
Metal Cattle Guard

Photo: CAMA_C4_0604 Route: 413-001-0.72
Wood Bridge NBIS:NA
See CAMA_C4_0605, CAMA_C4_0606

Photo: CAMA_C4_0607 Route: 413-002-0.99
Begin Section

Photo: CAMA_C4_0613 Route: 413-003-1.62
Begin Section

Photo: CAMA_C4_0614 Route: 413-004-2.63
Begin Section

Features Photographs

Photo: CAMA_C4_0615 Route: 413-004-2.69
Metal Cattle Guard

Photo: CAMA_C4_0616 Route: 413-004-2.81
Metal Culvert 20ft long 18in dia. 2ft deep

Photo: CAMA_C4_0617 Route: 413-004-2.81
Metal Culvert 20ft long 18in dia. 2ft deep

Photo: CAMA_C4_0618 Route: 413-004-3.36
Metal Culvert 20ft long 12in dia. 1ft deep

Photo: CAMA_C4_0619 Route: 413-004-3.36
Metal Culvert 20ft long 12in dia. 1ft deep

Photo: CAMA_C4_0620 Route: 413-005-3.61
Begin Section

Features Photographs

Photo: CAMA_C4_0621 Route: 413-005-4.28
Metal WCS Other 90ft long 18in dia. 3ft deep

Photo: CAMA_C4_0622 Route: 413-005-4.28
Metal WCS Other 90ft long 18in dia. 3ft deep

Photo: CAMA_C4_0623 Route: 413-005-4.43
Metal WCS Flashboard Riser 25ft long 70in dia. 3ft deep

Photo: CAMA_C4_0624 Route: 413-005-4.43
Metal WCS Flashboard Riser 25ft long 70in dia. 3ft deep

Photo: CAMA_C4_0625 Route: 413-006-4.6
Begin Section

Photo: CAMA_C4_0626 Route: 413-006-5.02
Metal WCS Screw Gate 50ft long 24in dia. 4ft deep

Features Photographs

Photo: CAMA_C4_0627 Route: 413-006-5.02
Metal WCS Screw Gate 50ft long 24in dia. 4ft deep

Features Photographs

Photo: CAMA_C4_0608 Route: 414-001-0.0
Begin Section

Photo: CAMA_C4_0609 Route: 414-001-0.01
Metal Cattle Guard

Photo: CAMA_C4_0610 Route: 414-001-0.53
Metal Culvert 20ft long 18in dia. 1ft deep

Photo: CAMA_C4_0611 Route: 414-001-0.53
Metal Culvert 20ft long 18in dia. 1ft deep

Photo: CAMA_C4_0612 Route: 414-001-0.8
Metal Open Rail Gate

ROUTE: 600

Features Photographs

Photo: CAMA_C4_0646 Route: 600-001-0.01
Problem Area Location of Main Diversion West to NE Corner Lair Field Road. Asset # 10064359 Could not locate road

Accident Summary

Number of Accidents Reported	Timespan of Accidents	Injuries	Fatalities
0	No Accidents to Report	0	0

APPENDIX

TABLE 1 - GENERAL FWS ROAD FUNCTIONAL CLASSIFICATION	
Class I	Principal Refuge Road (Public Roads) - Routes that constitute the main access route, main auto tour route, or thoroughfare for refuge visitors. These routes are accessible by 2WD vehicles. Routes are numbered from 10 to 99.
Class II	Connector Refuge Road (Public Roads) - Routes that provide circulation within the refuge. These routes can also provide access to areas of scenic, scientific, recreational or cultural interest, such as overlooks, campgrounds, education centers, etc. These routes are accessible by 2WD vehicles. Routes are numbered from 100 to 199.
Class III	Special Purpose Refuge Road (Public Roads) - Roads that provide circulation within special use areas such as campgrounds or public concessionaire facilities or access to remote areas of the refuge. These routes may not be 2WD accessible. Routes are numbered from 200 to 299
Class IV	Administrative Access Road (Administrative Roads) - Routes intended for access to administrative developments or structures such as maintenance offices, employee quarters, or utility areas. These routes are accessible by 2WD vehicles. These routes may restrict access to the general public. Routes are numbered from 300 to 399.
Class V	Restricted Road (Administrative Roads) - Routes normally closed to the public, such as maintenance roads, service roads, patrol roads, and fire breaks. These routes may be open to the public for a short period of time for a special use, such as hunting access. These routes may not be 2WD accessible. Routes are numbered from 400 to 499.

A refuge road system contains those routes within or giving access to a refuge or other unit of the FWS that are administered by the FWS, or by the Service in cooperation with other agencies. The assignment of a functional classification (FC) to a refuge road is not based on traffic volumes or design speed, but on the intended use or function of that route

DESCRIPTION OF RATING SYSTEM

Rating Data is collected on four different surface types: Asphalt, Concrete, Gravel, and Native. The Utah LTAP Center's Remaining Service Life (RSL) system is used for all surface types. The RSL system is based on the Strategic Highway Research Program's (SHRP) Distress Identification Manual.

Asphalt Rating System

Data is collected on the following distresses and conditions:

- **Fatigue Cracking** - Interconnected cracks forming small irregular shapes.
- **Longitudinal Cracking** - Cracks running parallel with the roadway, in the direction of traffic.
- **Transverse Cracking** - Cracks perpendicular to the roadway, going across the lane or lanes.
- **Block Cracking** - Interconnected cracks forming large blocks.
- **Edge Cracking** – Cracks running along the edge of the pavement surface.
- **Patches** - Original surface repaired with new asphalt patch material.
- **Potholes** - Holes or depressions in the pavement.
- **Rutting** - surface depressions in the wheel paths.
- **Roughness –** Evenness of pavement for serviceability.
- **Drainage** – Ability of the road surface to drain water based on proper slope.

A Condition Rating value is calculated for each homogenous pavement section, and can be up to 1 mile in length.

Rating Index Formula

Fatigue, longitudinal, transverse, block, and edge cracking, along with patching and potholes are rated on a 0 - 9 scale (0 = no distress, 9 = maximum distress). The rating given is based on the extent and the severity of the distress. Rutting, roughness, and drainage are rated on a 0 - 3 scale (0 = excellent, 3 = poor). Each distress type has given Remaining Service Life (RSL) values (in years) based on the rating for that particular distress. The distress with the rating resulting in the lowest RSL value is considered to be the governing distress. That value is then assigned as the RSL of the road segment.

Concrete Rating System

Data is collected on the following distresses and conditions:

- **Spalling of Joints** – Chipping, breaking, or cracking of slab edges
- **Joint Seal Damage** – Any damage or condition that enables materials or water to infiltrate into the joint from the surface.
- **Corner Breaks** – A portion of the slab separated by a crack that intersects the adjacent transverse and longitudinal joints, forming approximately a 45° angle to the direction.
- **Broken Slabs** – Faulting and/or cracking localized to individual slabs.

- **Faulting** – Difference in elevation across a crack or joint.
- **Longitudinal Cracking** – Cracks in the pavement running parallel to road.
- **Transverse Cracking** - Cracks in the pavement running perpendicular to the direction of traffic.
- **Patch Deterioration** – Faulting, settling, or cracking of previously placed patch
- **Map Cracking** – A series of cracks that extend only into the upper surface of the Slab

A Condition Rating value is calculated for each homogenous pavement section, and can be up to 1 mile in length.

Rating Index Formula
The rating procedure for concrete pavement is the same as that for asphalt pavement described previously. Each of the distresses described above are rated on the same 0 – 9 scale. The governing distress is then determined and the RSL associated with that distress is assigned to the road segment.

Gravel and Native Rating System

Data is collected on the following distresses and conditions:
- **Cross Section (Crown)** - Roadway built so that the center is higher than the shoulder, to prevent water from pooling on roadway.
- **Roadside Drainage** - Roadside ditches and culverts to handle water flow and prevent pooling on the roadside.
- **Corrugations (Washboarding)** - Small trenches or holes developing perpendicular to the roadway.
- **Potholes** - Holes or depressions in the roadway.
- **Rutting** - Depressions running parallel with the roadway, in the wheelpaths.
- **Dust** - Amount of dust caused by traffic.
- **Loose Aggregate (Gravel Only)** - Loose gravel, typically piled up on the roadway edges or centerline.

A Condition Rating value is calculated for each homogenous pavement section, and can be up to 1 mile in length.

Rating Index Formula
The rating procedure for unpaved roads is the same as that for asphalt and concrete pavements described previously. Of the distresses described above, corrugations, potholes, rutting, and loose aggregate are rated on the same 0 – 9 scale previously mentioned. Cross section, roadside drainage, and dust are rated on the same 0 – 3 scale described for asphalt pavement. The governing distress is then determined and the RSL associated with that distress is assigned to the road segment.

Condition Descriptions by Surface Type

The following definitions are used to describe pavement condition for the various surface types. These are general guidelines for condition indications.

Asphalt

Excellent – Recently constructed or overlaid road where construction or overlay was performed correctly- No maintenance required. RSL = 19-20 years.

Good – Low extent longitudinal and transverse cracks. All cracks are 1/4" or less with little or no crack erosion. Patches are in good condition and applied correctly. Routine Maintenance recommended. RSL = 13-18 years.

Fair - Roads are in good structural condition with little or no fatigue cracking. Longitudinal, transverse, and edge cracking is at medium extent and severity. Block cracking is not extensive. Any patches are in good condition. Preventative maintenance recommended. RSL = 7-12 years.

Poor - Road beginning to show signs of structural distress. Fatigue cracking is medium to high extent and medium severity. Cracking will be severe. Surface may have severe block cracking and show. Patches are in fair to poor condition. There is moderate distortion or rutting and occasional potholes. Rehabilitation recommended. RSL = 1-6 years.

Failed - Road is severely deteriorated. Signs of structural failure appear along with severe and extensive fatigue cracking, distortion, potholes, or extensive patches in poor condition. Reconstruction recommended. RSL = 0 years.

Concrete

Excellent - New pavement. No maintenance required. RSL = 19-20 years

Good - First signs of transverse cracking, patch or repair, more extensive pop-outs, or scaling. Sealing or routine maintenance recommended. RSL = 13-18 years.

Fair – Pavement has join or crack spalling, and/or faulting, along with cracking at corners with broken pieces. Any Patches are in fair condition and faulting is at a minimum. Preventative maintenance recommended. RSL = 7-12 years.

Poor - Joints and cracks are open 1 inch, spalled, or patched. Faulting is more severe. Rehabilitation recommended. RSL = 1-6 years.

Failed - Most slabs have failed structurally, and faulting is severe. Reconstruction recommended. RSL = 0 years.11-9

The following table shows the relationship between RSL and condition.

SUBJECTIVE CONDITION RATING FOR REMAINING SERVICE LIFE (Asphalt and Concrete Pavements)								
	FAILED	POOR		FAIR		GOOD		EXCELLENT
RSL Years	0	1-3	4-6	7-9	10-12	13-15	16-18	19-20

Gravel and Native

Note - Native surfaces do not have a gravel layer.

Excellent - Newly constructed road that has been constructed properly with proper crown, drainage and gravel layer. Little or no distress. No maintenance recommended. RSL = 8-10 years.

Good - Crown, drainage provisions, and gravel layer are in good condition. Distress limited to traffic effects such as dust, loose aggregate, and low severity corrugations (wash boarding). RSL = 5-7 years.

Fair - Adequate drainage and crown through majority of roadway. Crown repair, ditch improvement may be necessary. Road has more severe corrugations and potholes. Preventative maintenance recommended. RSL = 3-4 years.

Poor - Travel at slow speeds is necessary. Additional gravel layer needed to carry traffic. Poor crown. Ditching is inadequate and rutting is extensive and severe. Rehabilitation recommended. RSL = 1-2 years.

Failed - Travel is difficult, and road may be closed at times. Rutting and Corrugations are very severe. Total Reconstruction of road is recommended. RSL = 0 years.

The following table shows the RSL values for gravel and native roads in terms of excellent, good, fair, poor, and failed condition.

SUBJECTIVE CONDITION RATING FOR REMAINING SERVICE LIFE (Gravel and Native Surfaces)					
	FAILED	POOR	FAIR	GOOD	EXCELLENT
RSL Years	0	1-2	3-4	5-7	8-10

NATIVE PRIMITIVE/IMPROVED RATING SHEET

Cross Section (Crown)*

Severity	Condition		Description
	No Defects	0	Crown 4-6" with no restriction of water flow from centerline to ditch.
	Minor Defects	1	Inadequate or inconsistent crown. Drainage to ditch may be restricted.
	Moderate Defects	2	Flat crown, drainage to ditch restricted.
	Major Defects	3	Reverse crown, bowl-shaped road, drainage on roadway

Rutting

Severity	No Defects	Extent (Length) Low <10%	Med 10-30%	High >30%
Low < 6"		1	2	3
Med 6-12"		4	5	6
High > 12"		7	8	9

Roadside Drainage*

Severity	Condition		Description
	No Defects	0	Wide, deep ditches (>4') with no restriction to water flow.
	Minor Defects	1	Adequate ditches (>2' deep), minor obstructions restrict water flow.
	Moderate Defects	2	Shallow, narrow and obstructed ditches. Minor erosion of road.
	Major Defects	3	No ditch, drainage on roadway with moderate to severe erosion.

Potholes

Severity	No Defects	Extent (Area) Low <10%	Med 10-30%	High >30%
Low < 6"		1	2	3
Med 6-12"		4	5	6
High > 12"		7	8	9

Dust

Severity	Condition		Description
	No Defects	0	No obstruction to sight distance.
	Minor Defects	1	Sight distance > 550'
	Moderate Defects	2	Sight distance 225'-550'
	Major Defects	3	Sight distance < 225'

Corrugations

Severity	No Defects	Extent (Length) Low <10%	Med 10-30%	High >30%
Low < 3"		1	2	3
Med 3-6"		4	5	6
High > 6"		7	8	9

* Crown and Drainage are not rated for roads that have no constructed crown or drainage. This applies to Native and Gravel roads.

GRAVEL RATING SHEET

Cross Section (Crown)

Severity	Condition		Description
	No Defects	0	Crown 4-6" with no restriction of water flow from centerline to ditch.
	Minor Defects	1	Inadequate or inconsistent crown. Drainage to ditch may be restricted.
	Moderate Defects	2	Flat crown, drainage to ditch restricted.
	Major Defects	3	Reverse crown, bowl-shaped road, drainage on roadway

Rutting

Severity	No Defects	Extent (Length) Low <10%	Med 10-30%	High >30%
Low < 1"		1	2	3
Med 1-3"		4	5	6
High > 3"		7	8	9

Roadside Drainage

Severity	Condition		Description
	No Defects	0	Wide, deep ditches (>4') with no restriction to water flow.
	Minor Defects	1	Adequate ditches (>2' deep), minor obstructions restrict water flow.
	Moderate Defects	2	Shallow, narrow and obstructed ditches. Minor erosion of road.
	Major Defects	3	No ditch, drainage on roadway with moderate to severe erosion.

Potholes

Severity	No Defects	Extent (Area) Low <10%	Med 10-30%	High >30%
Low < 1"		1	2	3
Med 1-3"		4	5	6
High > 3"		7	8	9

Dust

Severity	Condition		Description
	No Defects	0	No obstruction to sight distance.
	Minor Defects	1	Sight distance > 550'
	Moderate Defects	2	Sight distance 225'-550'
	Major Defects	3	Sight distance < 225'

Corrugations

Severity	No Defects	Extent (Length) Low <10%	Med 10-30%	High >30%
Low < 2"		1	2	3
Med 2-4"		4	5	6
High > 4"		7	8	9

* Crown and Drainage are not rated for roads that have no constructed crown or drainage. This applies to Native and Gravel roads.

Loose Aggregate

Severity	No Defects	Extent (Area) Low <10%	Med 10-30%	High >30%
Low < 1"		1	2	3
Med 1-3"		4	5	6
High > 3"		7	8	9

ASPHALT RATING SHEET

Fatigue Cracking

Severity	No Defects	Extent: Low 1 crack WP	Extent: Med 2 cracks WP	Extent: High >30% length
Low-Cracks < 1/4"		1	2	3
Med-Cracks 1/4-3/4"		4	5	6
High-Cracks > 3/4"		7	8	9

Edge Cracking

Severity	No Defects	Extent (Length): Low <10%	Extent (Length): Med 10-30%	Extent (Length): High >30%
0-6" from curb		1	2	3
6-18" from curb		4	5	6
> 18" from curb		7	8	9

Longitudinal Cracking

Severity	No Defects	Extent: Low 1 crack full length	Extent: Med 2 cracks full length	Extent: High >2 cracks full length
Low-Cracks < 1/4"		1	2	3
Med-Cracks 1/4-3/4"		4	5	6
High-Cracks > 3/4"		7	8	9

Block Cracking

Severity	No Defects	Extent (Length): Low > 15x15' squares	Extent (Length): Med 15-10' squares	Extent (Length): High <10x10' squares
Low-Cracks < 1/4"		1	2	3
Med-Cracks 1/4-3/4"		4	5	6
High-Cracks > 3/4"		7	8	9

Transverse Cracking

Severity	No Defects	Extent (ft between cracks): Low > 200'	Extent (ft between cracks): Med 200-50'	Extent (ft between cracks): High < 50'
Low-Cracks < 1/4"		1	2	3
Med-Cracks 1/4-3/4"		4	5	6
High-Cracks > 3/4"		7	8	9

Utility Cuts

Severity	No Defects	Extent (Length): Low <10%	Extent (Length): Med 10-30%	Extent (Length): High >30%
Low-Cracks < 1/4"		1	2	3
Med-Cracks 1/4-3/4"		4	5	6
High-Cracks > 3/4"		7	8	9

Drainage/Roughness/Rutting

Severity	Condition		Description
	No Defects	0	Wide, deep ditches with no obstructions, smooth ride, no rutting, no potholes.
	Minor Defects	1	Drainage may be obstructed, < 1" rutting, minor roughness.
	Moderate Defects	2	Poor drainage, 1-2" rutting, noticeable roughness, potholes < 6" wide.
	Major Defects	3	No drainage; > 2" rutting; potholes 6-12" wide create roughness requiring reduced speeds.

CONCRETE RATING SHEET

Spalling of Joints

Extent (% joints)

Severity	No Defects	Low <10%	Med 10-20%	High >20%
	Low Spalls < 3"	1	2	3
	Med Spalls 3-6"	4	5	6
	High Spalls > 6"	7	8	9

Broken Slabs

Extent (% slabs)

Severity	No Defects	Low <5%	Med 5-15%	High >15%
	Low-no more than 3 pieces, no spalling/faulting	1	2	3
	Med-broken into >3 pieces, spalling/faulting <1/4"	4	5	6
	High-4 or more pieces, spalling/faulting >1/4"	7	8	9

Transverse Cracks

Extent (% slabs)

Severity	No Defects	Low <10%	Med 10-20%	High >20%
	Low-Cracks < 1/8"; no spalling/faulting	1	2	3
	Med-Cracks 1/8-1/2"; spall <3", fault >1/4"	4	5	6
	High-Cracks > 1/2"; spall >3", fault >1/4"	7	8	9

Joint Seal Damage

Extent (%joints)

Severity	No Defects	Low <10%	Med 10-20%	High >20%
	Low <10% joint length	1	2	3
	Med 10-50% joint length	4	5	6
	High >50% joint length	7	8	9

Faulting

Extent (Length)

Severity	No Defects	Low <10%	Med 10-30%	High >30%
	Low < 1/2"	1	2	3
	Med 1/2-1"	4	5	6
	High > 1"	7	8	9

Patch Deterioration

Extent (Area)

Severity	No Defects	Low <10%	Med 10-30%	High >30%
	Low-no fault, no settle at perimeter	1	2	3
	Med-fault & settle <1/4" at perimeter	4	5	6
	High-fault & settle >1/4" at perimeter, cracked patch	7	8	9

Corner Breaks

Extent (% of slabs)

Severity	No Defects	Low <10%	Med 10-20%	High >20%
	Low-corner cracks, no spalling or faulting	1	2	3
	Med-crack slightly spalled & faulted <1/4"	4	5	6
	High-crack highly spalled & faulted >1/4"	7	8	9

Longitudinal Cracks

Extent (% slabs)

Severity	No Defects	Low <10%	Med 10-20%	High >20%
	Low-Cracks < 1/8"; no spalling/faulting	1	2	3
	Med-Cracks 1/8-1/2"; spall <3", fault >1/2"	4	5	6
	High-Cracks > 1/2"; spall >3", fault >1/2"	7	8	9

Map Cracks

Extent (Area)

Severity	No Defects	Low <10%	Med 10-20%	High >20%
	Low-small connected cracks, no spalling	1	2	3
	Med-connected cracks, no spalling	4	5	6
	High-large connected cracks with surface spalling	7	8	9

Deficiency Ratings With Associated Remaining Service Life

Asphalt Rating Sheet

Fatigue Cracking	
Distress Rating	Remaining Service Life
0	20
1	10
2	8
3	6
4	8
5	6
6	4
7	6
8	2
9	0

Edge Cracking	
Distress Rating	Remaining Service Life
0	20
1	12
2	10
3	8
4	10
5	8
6	6
7	8
8	6
9	4

Transverse Cracking	
Distress Rating	Remaining Service Life
0	20
1	14
2	12
3	10
4	12
5	10
6	8
7	10
8	6
9	2

Utility Cuts	
Distress Rating	Remaining Service Life
0	20
1	14
2	12
3	10
4	12
5	10
6	8
7	10
8	6
9	2

Longitudinal Cracking	
Distress Rating	Remaining Service Life
0	20
1	14
2	12
3	10
4	12
5	10
6	8
7	10
8	8
9	6

Block Cracking	
Distress Rating	Remaining Service Life
0	20
1	12
2	10
3	8
4	10
5	8
6	6
7	12
8	6
9	2

Drainage/Roughness/Rutting	
Distress Rating	Remaining Service Life
0	20
1	16
2	10
3	4

SUBJECTIVE CONDITION RATING FOR REMAINING SERVICE LIFE IN YEARS (Asphalt & Concrete Roads)

RSL	FAILED 0	POOR 1 - 6	FAIR 7 - 12	GOOD 13 - 18	EXCELLENT 19 - 20

Concrete Rating Sheet

Spalling	
Distress Rating	Remaining Service Life
0	20
1	15
2	12
3	10
4	12
5	10
6	8
7	10
8	6
9	0

Broken Slabs	
Distress Rating	Remaining Service Life
0	20
1	15
2	12
3	10
4	12
5	10
6	8
7	10
8	6
9	0

Transverse Cracks	
Distress Rating	Remaining Service Life
0	20
1	18
2	15
3	12
4	15
5	10
6	6
7	10
8	4
9	0

Joint Seal Damage	
Distress Rating	Remaining Service Life
0	20
1	16
2	14
3	12
4	14
5	10
6	8
7	12
8	8
9	6

Faulting	
Distress Rating	Remaining Service Life
0	20
1	15
2	12
3	10
4	12
5	8
6	6
7	10
8	4
9	0

Patch Deterioration	
Distress Rating	Remaining Service Life
0	18
1	16
2	14
3	12
4	12
5	10
6	8
7	10
8	6
9	0

Corner Breaks	
Distress Rating	Remaining Service Life
0	18
1	16
2	14
3	12
4	12
5	10
6	8
7	10
8	6
9	0

Longitudinal Cracks	
Distress Rating	Remaining Service Life
0	20
1	18
2	15
3	12
4	15
5	10
6	6
7	10
8	4
9	0

Map Cracks	
Distress Rating	Remaining Service Life
0	20
1	18
2	15
3	12
4	12
5	10
6	6
7	10
8	4
9	0

Deficiency Ratings With Associated Remaining Service Life

Native Primitive Improved Rating Sheet

Cross Section	
Distress Rating	**Remaining Service Life**
0	10
1	7
2	5
3	0

Rutting	
Distress Rating	**Remaining Service Life**
0	10
1	9
2	7
3	5
4	7
5	4
6	3
7	4
8	2
9	0

Roadside Drainage	
Distress Rating	**Remaining Service Life**
0	10
1	8
2	4
3	0

Potholes	
Distress Rating	**Remaining Service Life**
0	10
1	9
2	7
3	5
4	7
5	4
6	3
7	4
8	2
9	0

Dust	
Distress Rating	**Remaining Service Life**
0	10
1	8
2	6
3	2

Corrugations	
Distress Rating	**Remaining Service Life**
0	10
1	9
2	7
3	7
4	6
5	5
6	5
7	4
8	3
9	0

SUBJECTIVE CONDITION RATING FOR REMAINING SERVICE LIFE IN YEARS (Gravel & Native Roads)

RSL	FAILED 0	POOR 1 - 2	FAIR 3 - 4	GOOD 5 - 7	EXCELLENT 8 - 10

Gravel Rating Sheet

Cross Section	
Distress Rating	**Remaining Service Life**
0	10
1	7
2	5
3	0

Rutting	
Distress Rating	**Remaining Service Life**
0	10
1	9
2	7
3	5
4	7
5	4
6	3
7	4
8	2
9	0

Roadside Drainage	
Distress Rating	**Remaining Service Life**
0	10
1	8
2	4
3	0

Potholes	
Distress Rating	**Remaining Service Life**
0	10
1	9
2	7
3	5
4	7
5	4
6	3
7	4
8	2
9	0

Dust	
Distress Rating	**Remaining Service Life**
0	10
1	8
2	6
3	2

Corrugations	
Distress Rating	**Remaining Service Life**
0	10
1	9
2	7
3	7
4	6
5	5
6	5
7	4
8	3
9	0

Loose Aggregate	
Distress Rating	**Remaining Service Life**
0	10
1	9
2	8
3	7
4	8
5	7
6	6
7	5
8	3
9	0